

American Artisan

Founded 1889

The Warm Air Heating and Sheet Metal Journal

Vol. 96, No. 16

CHICAGO, OCTOBER 20, 1928

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W. B. Whitten
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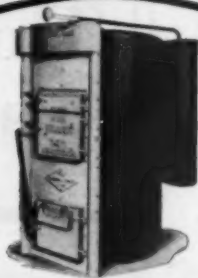
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CLEANER HEAT

Published Weekly by American Artisan and Hardware Record, Inc., 629 South Michigan Avenue, Chicago, Illinois.
AMERICAN ARTISAN—the Warm Air Heating and Sheet Metal Journal—entered as second class matter, March
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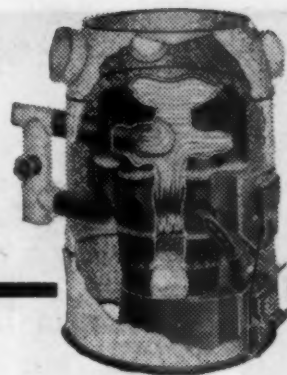
Any dealer handling this furnace can guarantee the highest class furnace job obtainable.

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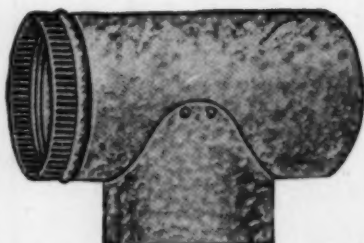
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January 9, 1928

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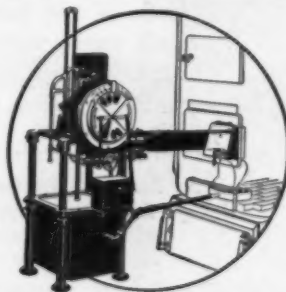
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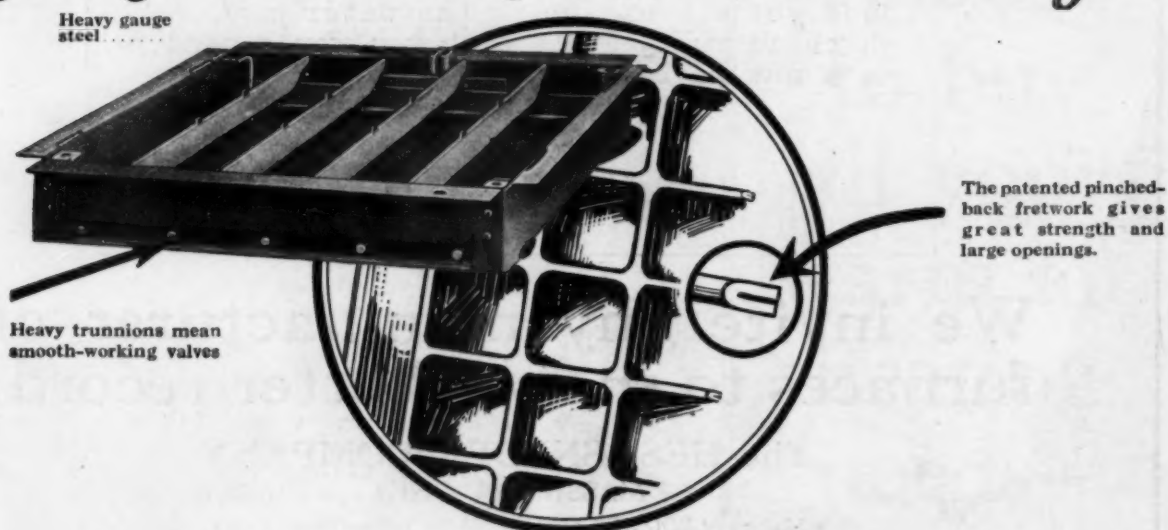
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Box and face are rigid
for great strength and durability

No. 4



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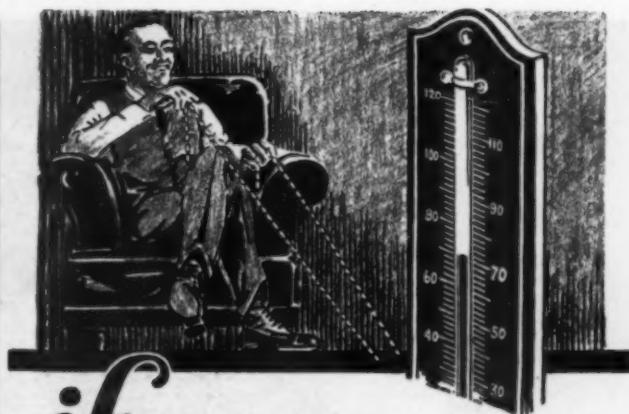
"Sheer Comfort"

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if you had nothing to do but sit with your eyes on a thermometer and hold the furnace draft and damper chains in your hands, you could maintain a uniform temperature by continual control of draft and check—more draft and less check as the temperature dropped a degree or two, less draft and more check as the temperature went above the limit for your comfort.

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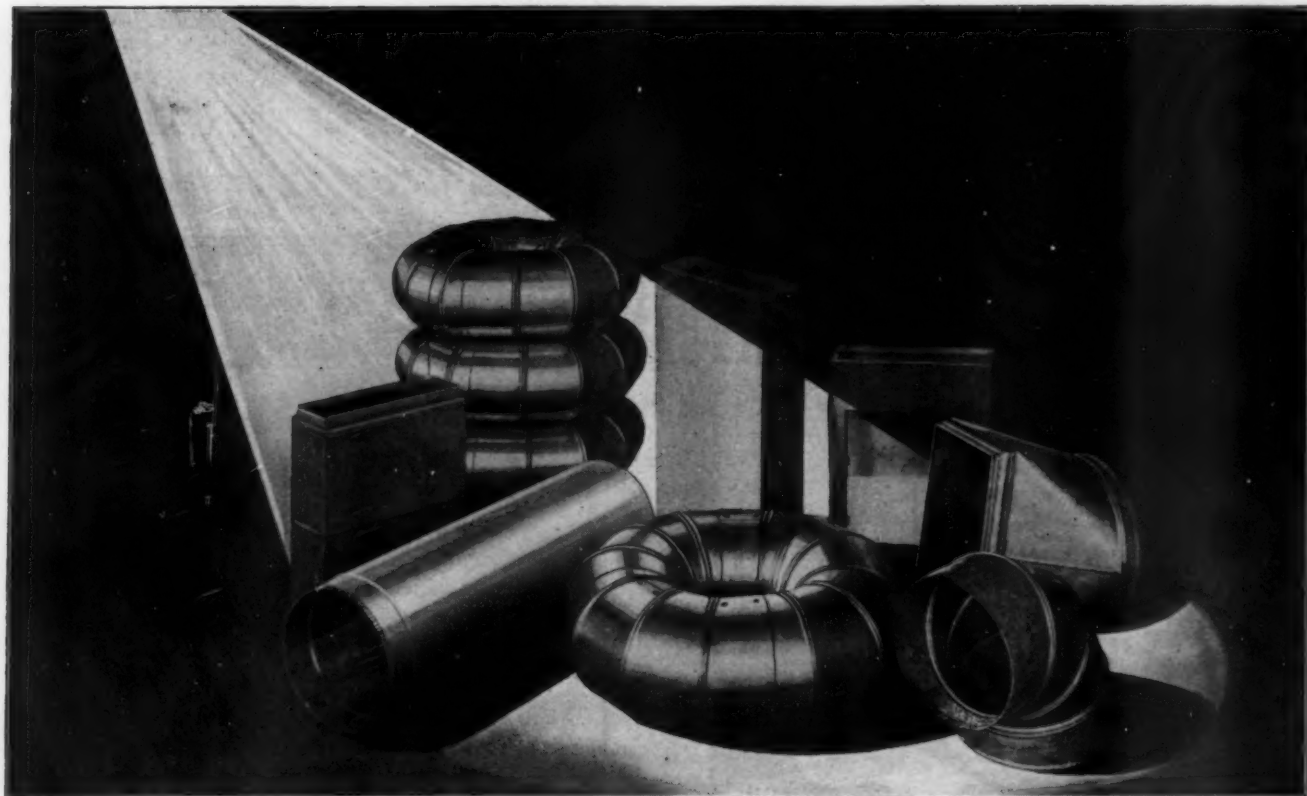
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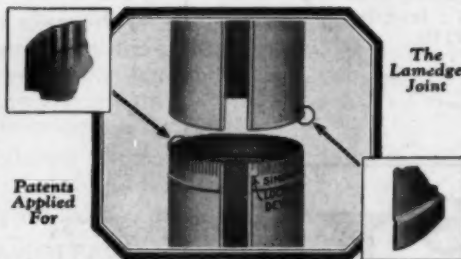
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WE make these claims: That LAMNECK pipe and fittings are better because they save time and labor . . . That they make any job go better and faster and more profitably . . . That they make a more substantial and efficient job, as well as a more profitable one. Will you permit us to appoint you sole judge as to the soundness of these claims?

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How About a Sample?



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City _____

State _____

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Wise furnace dealers will foresee the profits that can be made in vigorously pushing the sale of a reliable furnace fan during the coming Fall and Winter months. SPEE-DEE-HEET is now offered in two new Booster models—SPEE-DEE-HEET SENIOR and SPEE-DEE-HEET JUNIOR—low in cost—easy to install—two-speed motor—all cast aluminum aeroplane blade. Deliveries at low-speed are respectively 660 cubic feet per minute and 850 cubic feet per minute. Fan is controlled by simple switch which accompanies the unit. Motor is brushless, fully enclosed against the entrance of dust and built especially for the unit.

SPEE-DEE-HEET will benefit any furnace installation—but it works wonders where circulation is poor or where the furnace is undersized—complaints that are encountered every day.

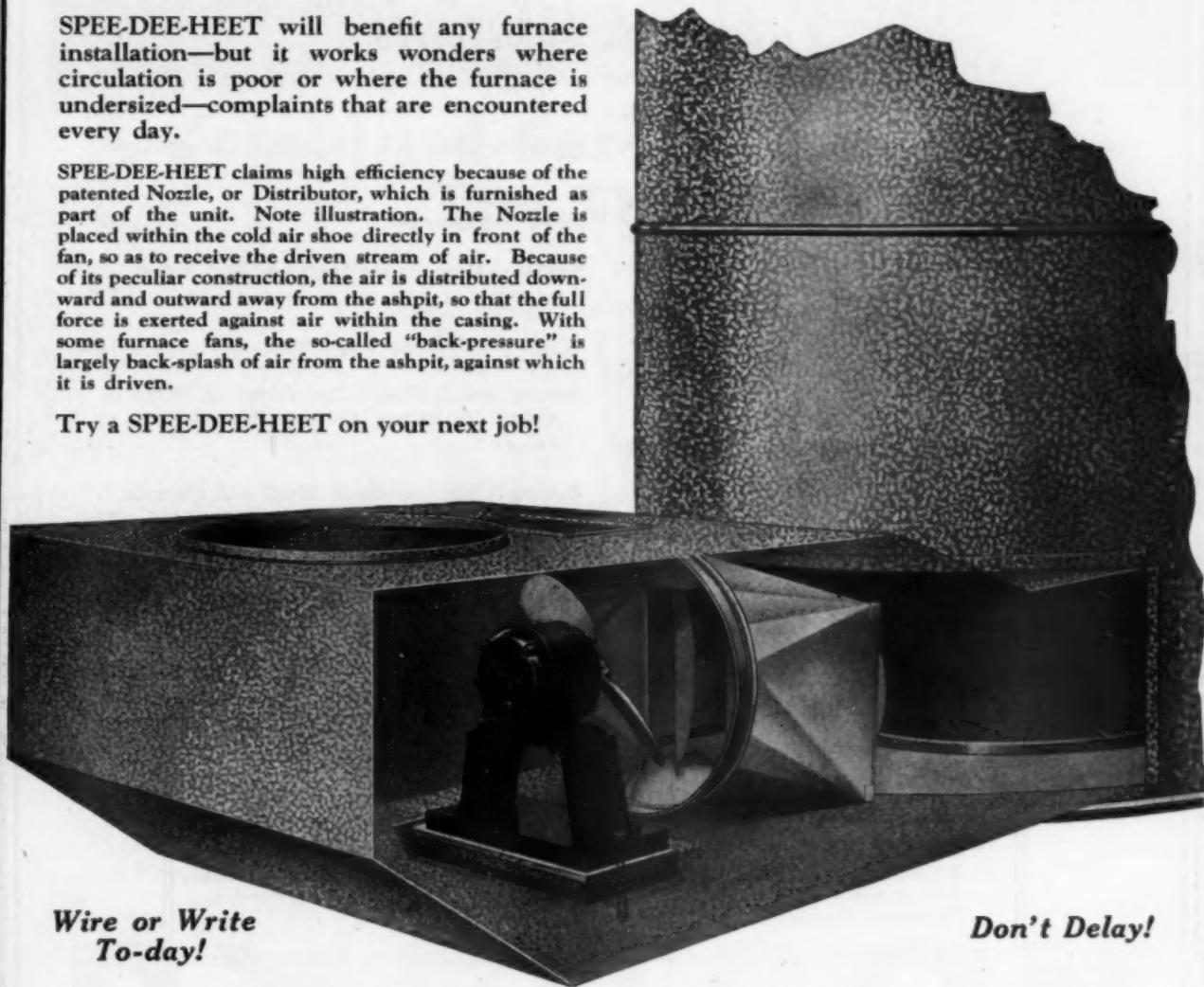
SPEE-DEE-HEET claims high efficiency because of the patented Nozzle, or Distributor, which is furnished as part of the unit. Note illustration. The Nozzle is placed within the cold air shoe directly in front of the fan, so as to receive the driven stream of air. Because of its peculiar construction, the air is distributed downward and outward away from the ashpit, so that the full force is exerted against air within the casing. With some furnace fans, the so-called "back-pressure" is largely back-splash of air from the ashpit, against which it is driven.

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The SPEE-DEE-HEET line of Furnace Fans includes Boosters and Pressure Fans from 12" diameter to 36" diameter of blade. It is the most complete line offered. Units can be furnished for any warm air heating job—no matter how large.

SPEE-DEE-HEET Boosters are unusually quiet. That is because of design, and also because the motor unit—the only moving part—does not touch sheet metal at any point. Quiet—simple—trouble proof.

We can also furnish shoes in several styles for SPEE-DEE-HEET. Investigate this feature—you can obtain the complete shoe and fan unit, with collars in place and cut to fit the furnace casing, at an unusually low cost.



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To-day!

Don't Delay!

THE WILLIAMSON HEATER COMPANY

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Published to Promote
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Warm Air Heating
and
Sheet Metal Work

American Artisan

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A THOUGHT WAVE FROM THE ETHER

I believe that in the long run less damage is done through the mistakes resulting from sticking to decisions once made than would occur from getting into the habit of constantly worrying whether you had decided rightly or wrongly and changing your mind all the time. No man can get ahead on two or more courses. You have to go one way at a time to get anywhere.
—Theodore Roosevelt.



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Homeward Bound—

But "home" to what? A little cabin built of rough-hewn timbers through which the melting snows slowly seeped in the winter—a little cabin that might be demolished in seconds by a forest fire in the summer.

"Home" never meant comfort or safety to these old pioneers of what is now the "West that Inland Serves".

But today—in these very same regions—buildings of every description are covered with INLAND COPPER ALLOY STEEL SHEETS. Here is a material which offers complete protection against fire and lightning—a material which is unsurpassed in resisting rust and corrosion.

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American Artisan

The Warm Air Heating and Sheet Metal Journal



Vol. 96

CHICAGO, OCTOBER 20, 1928

No. 16

Automatic Ventilation Rapidly Taking Place of Old Window Method

Field Unlimited for Sheet Metal Contractor Who Wishes to Enter

By PROFESSOR A. J. MACK*

THIS is the second of the series of articles on commercial ventilation. In the first article of the series the factors which enter into modern ventilation problems were discussed. In this article some of the methods and advantages of different ways of ventilating will be discussed. The ventilation requirements of various classes of buildings vary widely as will be pointed out later in the series. Of primary importance in most classes are health and comfort for occupants. In some cases, control of humidity and temperature are of greater importance, as in the case of cold storage of products and in some treating processes such as drying operations. No doubt, numerous other cases could be mentioned.

Some means of correct ventilation are especially desirable in the following classes of commercial buildings:

Prosperous Customers for Ventilating Equipment

1. In buildings where a large number of people congregate. In this class are included theaters, aud-

itoriums, schools, factories, work shops, etc.

2. In buildings housing birds and animals. This class of ventilation has been discussed in a previous series of articles in this magazine on Farm Ventilation.

3. In buildings where the heat is excessive as in heat treating plants, cooking and canning factories, boiler and engine rooms, etc.

4. In rooms where dust, smoke

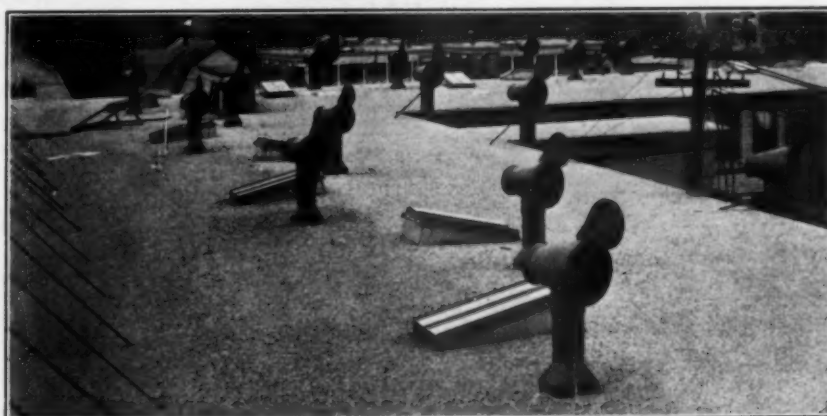
must be present in any case before the desired results are possible.

2. The point at which the air enters the room is of great importance, and it must be balanced against the air leaving the enclosure. It must have the proper temperature and humidity. As stated in the first article, ventilation also involves heating and refrigeration.

3. The air must be removed at the proper point. This a very material aid in proper air distribution and circulation. Between the various inlets and outlets the air must pass in the most advantageous paths in order to carry out any impurities which may be undesirable.

There are various ways in which ventilation

may be secured. The opening and closing of windows is the oldest method of ventilating buildings. In this way the amount of air can be controlled and on some occasions the proper point of admission; but proper control of other conditions for correct ventilation is almost impossible. The difficulty of properly ventilating buildings by use of windows only has resulted in some changes in design of buildings



The W. L. Douglas Shoe Company, Brockton, Massachusetts, Fully Equipped With Ventilators

and fumes are produced such as foundries, forge shops, round houses, rattler rooms, stone cutting rooms, pickling rooms, dye rooms, chemical plants, etc.

5. In rooms where the moisture is excessive such as laundries, kitchens, paper mills, dye houses, etc.

For efficient ventilation many things must be taken into consideration, among which are:

1. The proper amount of air

*Professor of Mechanical Engineering, Kansas State Agricultural College, Manhattan, Kansas.

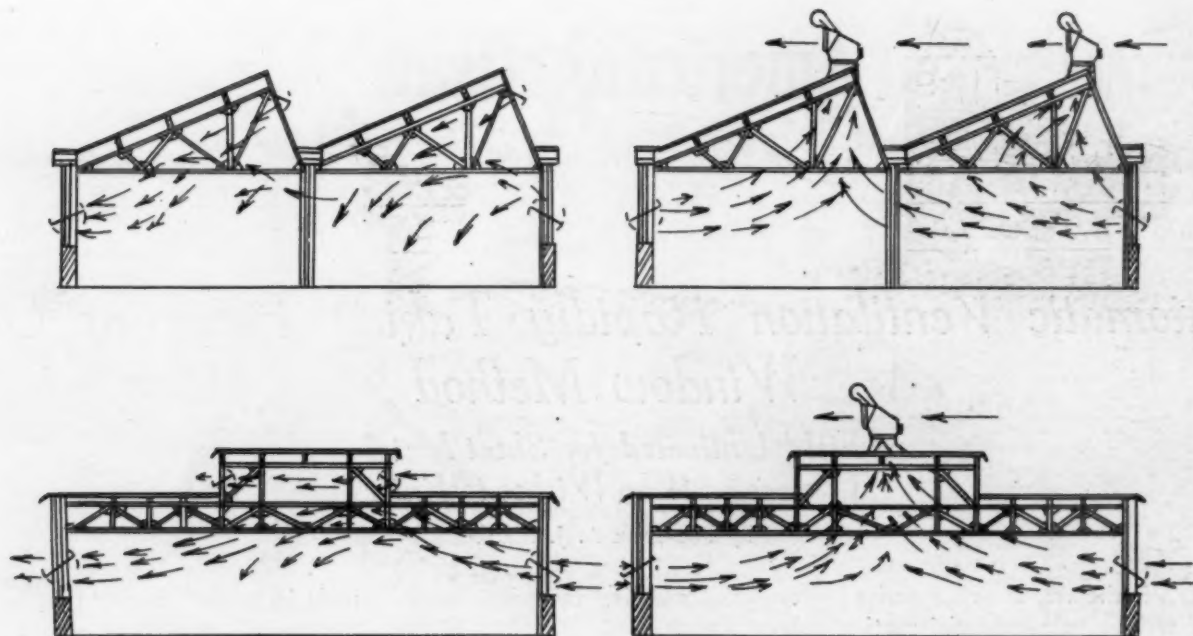


Figure 1

and in the development of ventilating systems of various kinds.

Saw Tooth Ventilator Requires Constant Attention

The monitor and saw tooth roofed buildings offer some possibilities of improved ventilating conditions but do not entirely solve the problem of proper ventilation, at least not without constant attention in the regulation of the control windows. These types of buildings do, however, provide excellent means for admission of light.

Advent of Automatic Ventilators

The next step in ventilation is the use of the automatic roof ventilators. They are a very great improvement over windows in connection with monitor or saw tooth roofs. They can always be placed in the most advantageous positions and are not affected by wind directions as are windows. Also they lend themselves better to the proper flow and distribution of air than do the windows.

Figure I shows how automatic roof ventilators are used in connection with monitor and saw tooth roofs. The arrows show the path of the gases in similar buildings in each case. It can be noted that the air flow in buildings equipped with the automatic ventilators is very

much better than in the buildings not so equipped.

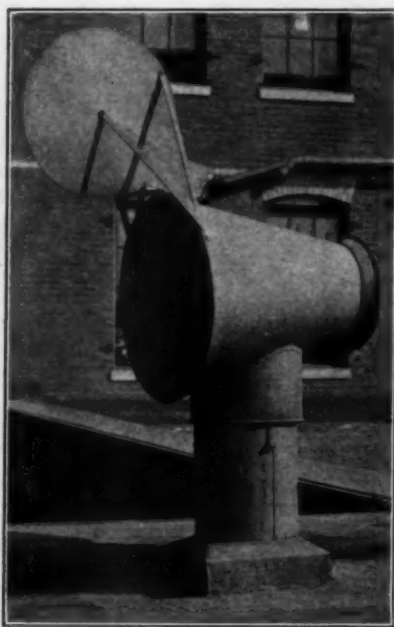
The primary advantage of the automatic roof ventilator is in its location and its ability to remove the air

properly admitting fresh air in the proper condition at all times will make a very satisfactory, rather inexpensive, ventilating system.

Cost of Operating Automatic Ventilator Negligible

It is claimed that the additional cost of automatic roof ventilators is very little, if any, in excess of the cost of operating sash over stationary sash. The cost of operation and up-keep of the automatic ventilators is negligible after they are once installed.

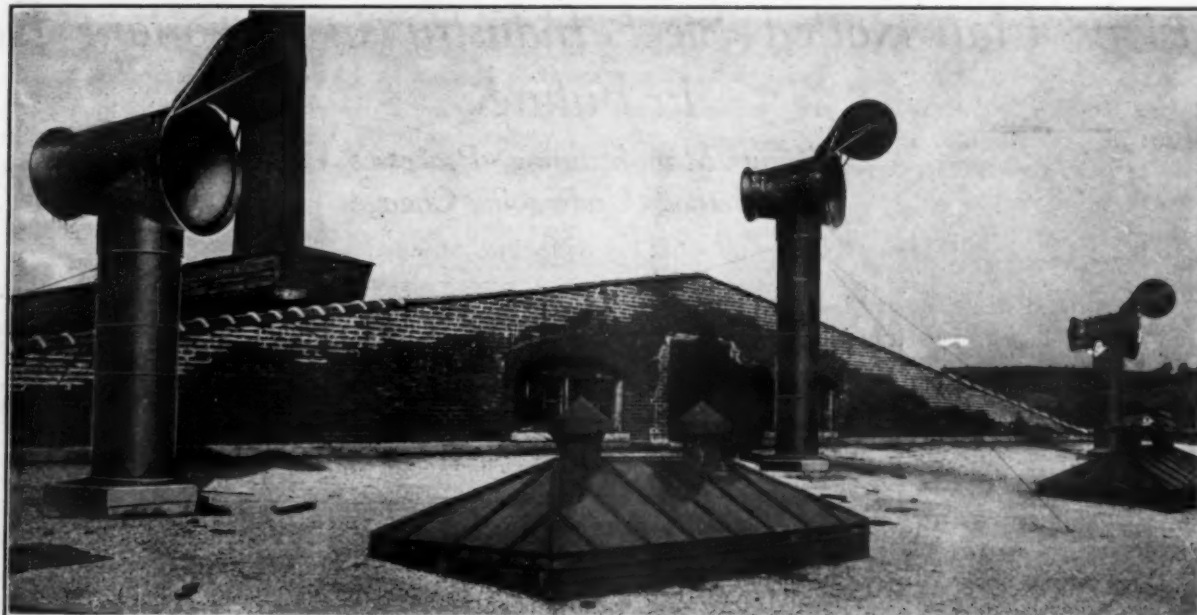
The power fan systems are, of course, to be preferred in cases where the cost of installation and operation are justified. These systems are the most expensive systems both in first cost and in operating costs. They are, however, much more subject to exact control and are well adapted to use in connection with theaters, schools, churches, etc., where it is desirable to have exact and uniform conditions at all times. They are, in many cases, used with air conditioning apparatus such as will be discussed later in the articles. They are also well adapted to use where heavy fumes are to be removed. Often times, however, fans and automatic roof ventilators can be used advantageously in the same installation. The automatic roof ventilator in such



Big Ventilator on the Thomas S. Plant Factory, Jamaica Plain, Massachusetts

at the proper point. In so doing, the foul air, fumes and gases are carried along to the point of exit and are not carried downward again where they are objectionable.

A combination of the automatic roof ventilator and some means of



Photos by courtesy of the B. F. Sturtevant Company, Boston, Mass.

Ventilator Installation on the Haverhill Boxboard Company, Haverhill, Massachusetts

cases is used as the final exit for fumes, gases, etc.

Life of Ventilator Depends Upon—

The life of the ventilator is, of course, dependent upon the service to which it is put, to the materials from which it is made, and to the external weather conditions. As previously stated, each installation is an engineering problem in itself and a proper selection of equipment as to size, construction, and material is of importance.

Roof ventilators are available in many sizes and materials, and it is merely a question of the selection of one most suitable for each job. Materials quite commonly used are galvanized iron, asbestos covered iron, copper and other materials especially designed for resistance to disintegration from contact with the chemical constituents of the exit gases.

This concludes the second of the series of articles on commercial ventilation. In the following articles some idea of figures and methods used in determining the proper size, selection of type of equipment.

New Jersey Zinc Products Going on Byrd Expedition

When the telephone and radio apparatus carried by the Byrd Antarctic Expedition is set up far from

civilization in the frozen wastes of the South, the power supplied by the batteries will be dependent upon the performance of a New Jersey Zinc Company product — Horse Head rolled zinc. This metal, in the form of a cylinder, acts as the positive element in the batteries which were manufactured by the Waterbury Battery Company.

A complete report of the Metal Branch meeting, National Hardware Association, Atlantic City, will be given next week.

The fact that these products have been selected for this important work is recognition of their well-known quality and dependability, under the conditions which they shall be called upon to perform. Snow and ice, 100-mile gales and temperature of 80° below zero are not uncommon in the region to be covered by the expedition, but according to M. L. Martus, president of the Waterbury Battery Company, such conditions will not impair the efficiency of the batteries. He states:

"Not until extensive tests on several types of batteries were made did F. E. Menholtz, radio consultant for the expedition, decide upon

our Waterbury Telecells as the most suitable. This type of battery is called the latest development in the primary field. It is made of only the highest grade materials, and because of the fact that Horse Head zinc averages better than 99.94 per cent pure we have chosen this metal for use in its manufacture."

The battery industry is not the only consumer of Horse Head zinc. It is also extensively used in the manufacture of high-grade brass, in galvanizing and in zinc base alloys for die casting. For the popular standing seam type of roofing Horse Head zinc is unsurpassed from the standpoint of economy. The fact that it cannot rust, coupled with its low cost, has led to its selection for many large roofing areas.

Horse Head zinc is produced from ores taken from the famous Franklin properties of the New Jersey Zinc Company.

Artisan Aids B. F. Deeter in Creating Confidence

B. F. Deeter, Muskegon, Michigan, finds ARTISAN an aid in building confidence in warm air heating: "Since taking AMERICAN ARTISAN, have been able to accomplish a great deal toward creating a new confidence in warm air heating in this community."

Visions Flat Rolled Steel Industry in Important Role in Future

Many Manufacturing Processes and Methods Undergoing Change

By GEORGE H. CHARLS, President Flat Rolled Steel Manufacturers' Association*

THE flat rolled steel industry is in a state of auspicious transition and propitious unseen forces are in operation, which in the course of time will effect changes undreamed of today.

Manufacturing methods that have undergone little change in forty years will be supplanted by processes which will require a revamping of many fixed ideas.

Buying habits, selling methods, fabricating factors and channels of distribution will undergo a gradual metamorphosis.

Automatic machinery and electric welding, continuous in their operation, will gradually take precedence over most vertical fabricating operations.

Automatic Machinery Rapidly Coming

It is not inconceivable that flat rolled steel a thousand feet long will be fed into gigantic machines, which will discharge metal lath or finished kitchen utensils with little or no attention on the part of the operator, except to feed, oil and remove the finished product.

It may come to pass that the galvanizing and tinning equipment of today will be scrapped and a continuously operating machine and processes as now are applied to wire take their place.

Wood will no longer be able to compete for railroad ties, which will be rolled, pressed and punched while yet containing part of the initial heat of the blast furnace. Manufacturers in Germany are now approaching this practice.

Telegraph, trolley and street lighting poles, made from one piece of flat rolled steel, of maximum

strength and appealing artistic design, will dart out of automatic machinery as cigarettes do today.

Pressed steel products—stronger, lighter, less costly—will be disgorged by automatic machinery in such quantity, of such quality, perfection and utility as to completely dominate vast, unexploited markets in which other products less suitable are being used today.

Packing Cases for Export to Be Made of Steel

Strong, sturdy, moisture-proof, water-tight containers, made from steel, will insure the whole and safe delivery of merchandise in both domestic and export markets.

The residences of the future will be made from non-warping steel joists, studding, lath, walls and ceilings, highly desirable because of their unflammable nature and so rich in the possibilities of decorative design; steel beds, chairs, dressers, kitchen equipment, stoves, refrigerators, tables and libraries—beautifully artistic and durable—will fill the interior of such residences.

Imagine the joy of dresser drawers that never stick fast; of doors that never warp, never jam, but always close smoothly; of window frames that are air-tight and smooth in motion; of baseboard, picture moulding and metal trim everlasting, unburnable and of unexcelled architectural perfection.

The fire loss of America, amounting to \$482,000,000 annually, will be automatically reduced—insurance rates will come down.

Losses on the farm due to lightning will become unknown as the beautifully designed steel roofs of the future absorb and ground the lightning.

Automobiles with an all-steel body and an all-steel top, built over a

frame of rugged steel, with non-shattering glass, will become as safe as the all-steel Pullman car.

The Fertile Imagination Conjures Up

One possessing vision and imagination could paint a picture of the new uses and utilities of products produced from flat rolled steel which would surpass Jules Verne's vision of "Twenty Thousand Leagues Under the Sea."

He would darken the skies with all-steel airplanes—air-tight, watertight, wind-tight and cold-tight—with all-steel propellers, rudders and wheels, capable of flying above the storm and gliding upon or under the water, of landing on the magnetic roofs and landing fields, made of steel.

He would show steel stainless, rustless and scaleless, possessing all of the undisputed strength of steel being used for all purposes requiring maximum durability with greatest strength and minimum weight.

And, in that fanciful picture, you would behold simply the triumphant dawn of the ideated age of steel—for the possibilities of the zenith of that age are beyond the reach and the grasp of mortal mind.

And What of Distribution?

The problems of distribution are becoming more and more complicated as mass production, new products and greater evolutions in merchandising methods progress.

There is a diminution in the quantity of flat rolled steel and semi-fabricated products which formerly passed through the jobber into the smaller shop, to be fabricated into various finished articles.

Large production units are now making many of such products in a quantitative way at very low cost and sales prices which are unten-

*Address to Metal Branch of the National Hardware Association of the U. S. Convention, Atlantic City, New Jersey, October 16, 1928.

able for such smaller units. Furthermore, mass producers with far-flung sales organizations are distributing their products direct instead of through the jobber.

Further complication is found in the rapid growth of dealers into strong and financially sound semi-jobbing concerns, claiming all the prerogatives and privileges of the jobber.

Plumbing supply houses, lumber yards, building supply houses and general stores have become such large distributors that in many instances their purchases and sales exceed in tonnage the sales of older, recognized jobbers.

In addition to the jobbers of this organization, there are also the jobbers of the American Heavy Hardware Association interested in these same products.

Once More the Question— "What Constitutes a Jobber?"

At your last meeting it was suggested that your association define what constituted the jobber. It was further suggested that those conforming to the definition be organized, merged into an association which would include all who engaged in wholesale merchandising of flat rolled steel and distinctly flat rolled steel articles. There was some well-founded criticism of this suggestion, based on the fact that there are too many associations in existence now.

However, it seems as logical now as it did then to argue that if these various complicated problems—confronting all these jobbers—are not analyzed and solved by all concerned, the effort of any one group will always prove inadequate and futile, especially so while so many distributing factors are in no association or group.

On the other hand, it seems that such an organization could not but be helpful in opening the eyes of old jobbers to the neglected opportunities to be found in the profitable distribution of many of the new products now being made from steel which are slipping into other channels of distribution. As an exam-

ple, most of the jobbers of the metal branch of the National Hardware Association are interested in distributing steel products that go into buildings and residences—sheets, spouting, roofing, nails, sometimes stoves, refrigerators—but how many have realized the illimitable possibilities of distributing such closely allied products as radiator covers, laundry dryers, table tops, shelving, enameled tile for bathroom and kitchen, metal trim, steel doors, and the many other steel products the demand for which in building is increasing so rapidly?

To continue to distribute a few bundles of sheets, several squares of roofing and a keg or two of nails, and entirely overlook new products which are coming into general use in home building and equipment, would seem not to be good business.

We are living in a tremendous age of change and progress—that which sufficed yesterday may be totally out of date and inadequate tomorrow.

There is a big work to be done if one is to keep abreast of the times in the distribution of flat rolled steel and the innumerable new products of great utility that are being made from it. We are told

"We cannot remain consistent with the world save by growing inconsistent with our own past selves.

"The man who consistently—as he fondly supposes 'logically'—clings to an unchanging position or opinion is suspended from a hook which has ceased to exist."

Call Upon Jobbers to Awaken to Opportunity

Now then, jobbers of steel, will you or will you not awaken to your wonderful opportunities, your new responsibilities, and resolve to be worthy, of your heritage, to become leaders and, in the true sense of the word super-distributors, forces for progress in the age of steel?

Where is the vision of the modern methods of enlightening and distributing this predominant product—steel—to an uninformed public?

Will you continue to complacently

await business coming to you when all the forces of competitive distribution are literally ringing doorbells and alluringly soliciting their share of the consumer's dollar for inadequate substitute products?

Will you desert to those competitive products which present enticing, temporary substitutes of untried, unproven merit, or will you, with intelligence and courage, renew your faith, revamp your sales methods, take on new products, and do what you so well know should be done to put behind the sale of steel the gimp and verve of modern merchandising?

Will you, one and all, resolve to disabuse the minds of the steel producer of the opinion that you are so interested in a thousand and one articles that you cannot possibly properly merchandise and distribute flat rolled steel and its fabricated products with all the energy and power to produce proper dealer interest and consumer demand in these products?

Will you put aside the unimportant, petty trivialities and high-mindedly co-operate, steadfastly and forcibly, in the program of simplification and standardization of quality the Department of Commerce, under the leadership of its secretary, Herbert Hoover, has so wisely recommended to producers and distributors alike?

Will you firmly and courageously refuse to sell any flat rolled steel, and products made from it, that are not marked "prime" and are not honestly true to gauge?

If you are to remain the legitimate dominant distributors of steel, best qualified by experience and knowledge, put your shoulders to the wheel, take your place in the line, and do your very important part in making the sheet steel trade extension committee feel the force and power of your earnest co-operation and hard-hitting sales efforts.

This, gentlemen, to my way of thinking, emphasizes the fundamental conditions which apply to the distribution of flat rolled steel in the country today.

Sheet Metal Jobbers Agree That Association Advertising Is Building Business

Also Find Aggressive Sheet Metal Men Interested in Bettering Business

THAT the sheet metal industry is undergoing a change from the old way of carrying on is becoming more evident every year. New demands, improved manufacturing facilities and more rapid transportation have all had their share in contributing to this change.

In order to learn what the reaction of jobbers is to this change, AMERICAN ARTISAN sent out a letter asking the following questions:

1—"Do you find the present tendency of the contractor to buy from hand-to-mouth strengthening your position as a jobber?"

2—"Is this tendency growing or abating?"

3—"Do you find the use of sheet metal on the increase? If so, do you attribute this increase to the advertising being done by the various associations such as the Sheet Steel Trade Extension Committee, the Copper and Brass Research Association, and the American Zinc Institute, or is it the result of greater efforts put forth by the sheet metal contractor himself?"

4—"Do you find sheet metal contractors interested in bettering their work to get larger business, or is 'price' still the basis for competition for the most part?"

That jobbers are not in agreement on some of these questions will be seen in the following replies:

Carter, Donlevy & Co.'s

Reply Is Indicative

1—"Yes, but it is making it harder and more expensive for the distributor to conduct his business.

2—"Growing rapidly and likely to remain as a fixed habit with the buyer.

3—"Yes, in many places; decreasing in others. The increase is due in a measure to the splendid work done by the various agencies you

allude to, which have certainly helped the cause of sheet metal. The Copper and Brass Research Association should be especially commended for their activities.

"The aggressive metal man who has his craft at heart has done a great deal to secure installations, entirely independent of the activities referred to. Being a practical man, he knows how to drive his selling arguments in favor of metal work home.

4—"This same type of sheet metal man, of whom there are hosts, is vitally interested in working the sheet metal craft into a real profession, where it belongs. On the other hand, there are a lot of men who still cling to the price proposition as the first and foremost consideration for securing work.

"Certainly if more energy were directed by the metal-working fraternity towards developing the use of sheet metal, as opposed to other products, it would ultimately result in spelling less insidious competition between the sheet metal contractors themselves, and general widening of use of our product."

E. G. Harvey of F. H. Lawson Company, Cincinnati

"Replying to your letter of October 9th, it is our opinion that the hand-to-mouth buying of the sheet metal contractor is strengthening our position as a jobber. This is discouraging a number of mills who are inclined to sell direct. The hand to mouth buying, in our estimation, is growing considerably.

"Although the general use of sheet metal is on the increase, in our opinion this is not due to the efforts of the sheet metal contractors, but to the sheet metal trades extension committees and various associations which are organized for the promotion of sheet metal use."

L. F. Hall, Jr., Hall & Carpenter, Philadelphia

1—"No."

2—"Abating."

3—"Largely to advertising with Copper and Brass Research Association by far the most successful.

4—"We note great difference. Some of our customers buy only best quality, while others consider only the price. There has, however, been a decided change in recent years in the buying of better quality roofing plates. Most of our sales are for 20-pound and 40-pound coating. This has been the best year for the sale of roofing tin for a number of years."

Wheeling Corrugating Company, Wheeling, W. Va., Finds Price Still Basis

1—"No."

2—"Growing."

3—"Yes. We attribute this to advertising by various associations, but the sheet metal men themselves are doing nothing.

4—"We do not find the sheet metal contractor interested in bettering himself. In our opinion 'price' is still the basis for his work."

Berger Brothers Company, Philadelphia, Replies

1—"No."

2—"Growing."

3—"Yes. It is partly due to the advertising being done by the various trade associations."

4—"Price to the majority."

Braden Manufacturing Company, Terre Haute, Ind.

1—"No."

2—"No answer."

3—"No."

4—"Price."

A. W. Howe of J. M. & L. A. Osborn Company, Cleveland, O.

1—"Yes."

2—"Growing."

(Continued on Page 114)



Made by
the
World's
Largest
Manufacturers
of
Steel
Furnaces



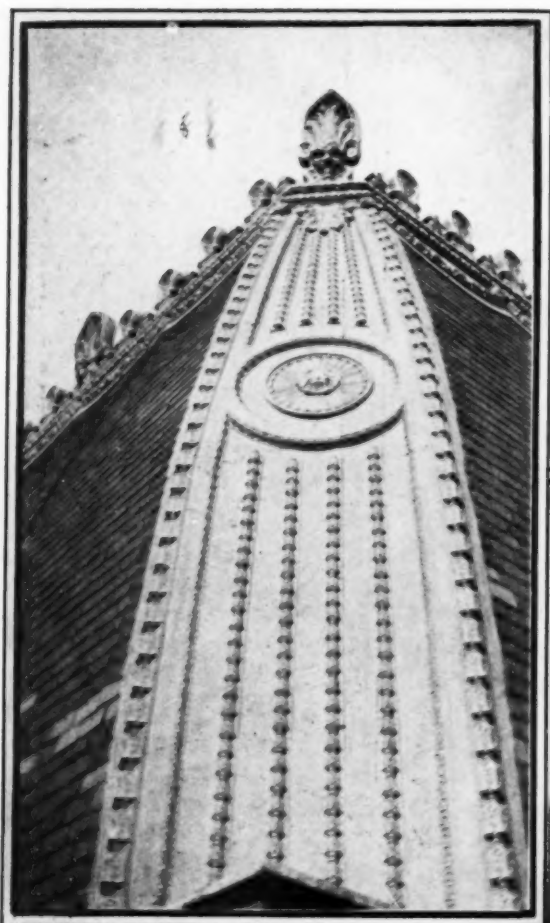
Lead in Your Community
with the Nation's
Leading Steel Furnace

FOR over thirty years the TORRID ZONE has been the leading steel furnace in every community in which it has been sold.

This leader of all steel furnaces is sold only through authorized dealers of which there are more than three thousand located in every state in the Union and Canada.

If you want to lead in your community with the nation's leading steel furnace write to us at once. Your territory may be open.

Lennox Furnace Company, Inc.
*Marshalltown Iowa * * * Syracuse New York*



ABOVE, Corner Panel and Top Ornament on Main Theatre Tower. Right, Minor Abuttment Tower Showing Attractive Zinc Ornament in Place.



UNLESS there were sheet metal contractors among them, probably few if any of the vast throng of men, women and children who waited in line for the recent grand opening of the new Balaban & Katz theater, Crawford Avenue and Maypole Street, Chicago, realized or gave any thought to the part sheet zinc had in the exterior decorative scheme of this mammoth motion picture emporium. But, nevertheless, that part was considerable, as was the sheet metal contractors' art and skill.

To appreciate to the full the significance the zinc masks and ornamentation which makes this modern theater the object of admiration that

it is, let us delve for a moment into the history of the origin of the mask. In the early days of the Romans and Greeks, the classic mask, or mascaron as the French call it, and which forms an important part of the exterior decorative arrangement of the Paradise theater, was employed to indicate the character of the part played by any one actor. This exaggerated grotesqueness in the characterization was made necessary chiefly because of the lack of printed programs and the meager, inadequate stage settings in the early theater.

The Romans later copied the comic and tragic masks of their actors in sculpture and in painting

ZINC BEAUTY And the New Chicago PARADISE THEATER

By George M. ...

for decorative purposes. The Italian renaissance artists, especially those of the Baroque period, that is, the period from the late 16th to early 18th century, favored the mask as a decoration for the keystones of doorways and other prominent positions of their theaters.

The influence and good taste of these early Italian artists and painters prevailed long after the original need for the mask had disappeared, and so we find the architecture of the theaters of our own day still giving a prominent position to the mask.

The accompanying illustrations show how Eberson & Eberson, 212 East Superior Street, Chicago, architects and designers of the Paradise theater, have imitated the practice of the Italian sculptors and painters by making use of a refined version of the early comic mask in the decorative scheme of the structure. But instead of employing terra cotta, stone or marble, they have selected the more durable



LEFT, Joe ...
Middle, Fr ...
Krysenski ...
W. J. Huddleston ...
the Boys Who ...
the Zinc Pl ...

TIFIES PROTECTS

Chicago THEATRE

ge Duerr

and more economical sheet zinc with which to do their imitating.

B. H. Armiger of Eberson & Eberson, Inc., architects, makes the following comment in regard to the classic masks shown on the theatre building: "Their origin is from the Greek and Roman theatre; masks being used to a considerable extent in the olden plays. From this it was only natural that the architects in designing their theatres embodied in their design many of these unusual and interesting forms.

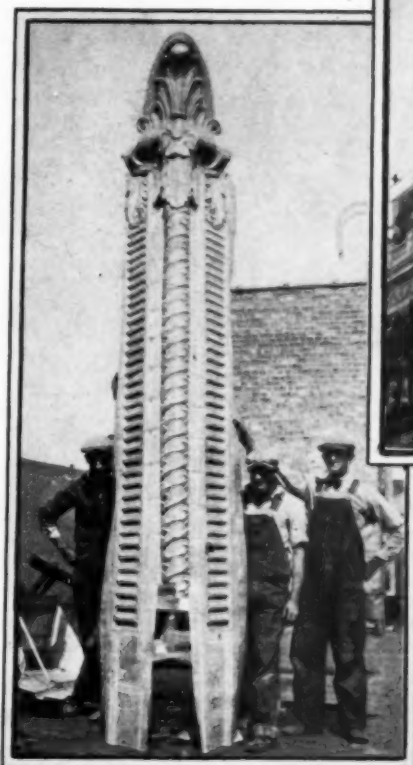
"Zinc was used, as it was more economical than copper and yet has considerable of the lasting qualities."

From the sources through which the New Jersey Zinc Sales Company derived this sheet zinc to the cutting, annealing, stamping and burnishing processes of Friedley-Voshardt Company, 733 So. Halsted street, Chicago, where the metal received its final shape and treatment, there is considerable

work involved, the extent of which is not as fully appreciated by the ordinary layman as should be. Neither does the layman give much thought to the vast amount of work and worry involved in getting this material into position.

But regardless of how well the work of treating and whipping into final shape is performed, the finished product comes to naught unless the work of putting the material into its final positions is well executed. That this latter work was well performed by Frank Staar & Sons, Inc., sheet metal contractors, 1473 North Halsted Street, Chicago, who had the contract, can be seen in the accompanying illus-

ABOVE, Gigantic Metal Sign and Front Appearance of Main Tower. Left, one of Corner Ornaments Before Being Hoisted to Position.



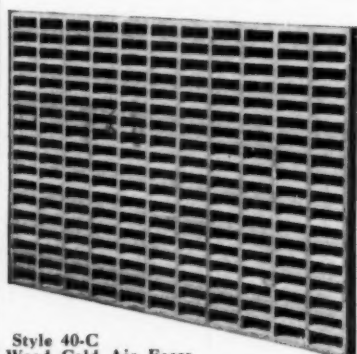
Joe Zid;
Frank Staar & Sons, Inc.,
Chicago, who put
the ornament in place.

trations. This is one of the largest ornamental zinc jobs that has ever been executed anywhere in America. And Frank Staar & Sons, Inc., organization are justly proud of it.

In addition to doing the ornamental sheet metal work on the exterior, this progressive firm also did the sheet metal work on the interior of the building. The unfading green slate for the mansard and tower roofs was furnished and set in place by this concern.

The history of this firm dates back to 1888 when Frank Staar, who is still actively engaged as president of the company, organized it. His three sons, Hans, Rudolph

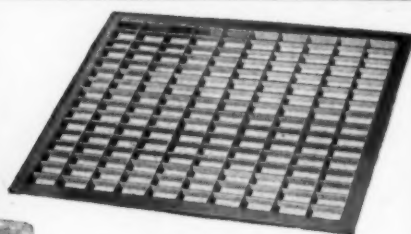
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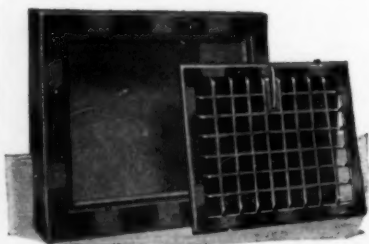
Style 40-C
Wood Cold Air Faces



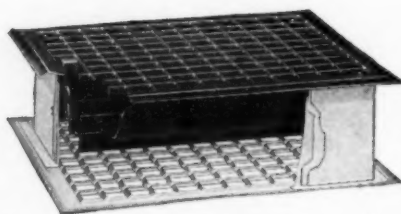
Aristocrat



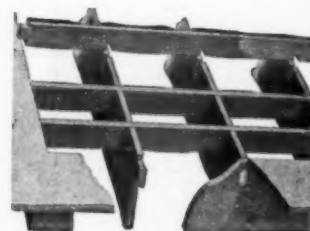
"Fabrikated" Steel Face



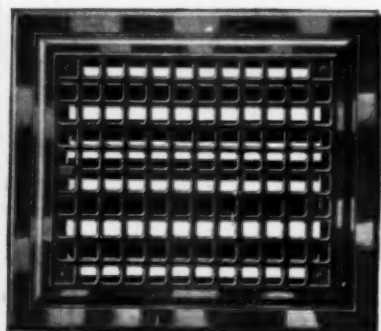
Colonial Model—Grille Removed



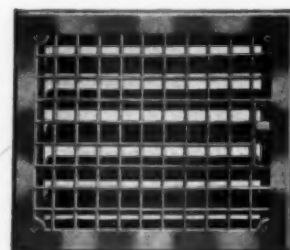
Adjustable Ceiling Ventilators



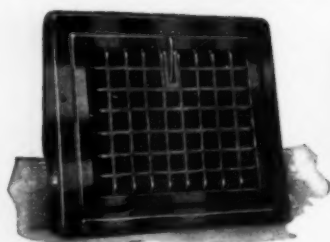
Enlarged Section of a "Fabrikated"
Steel Face



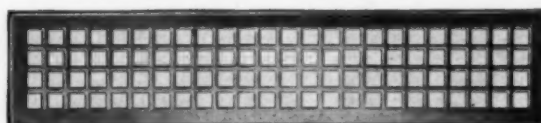
Steel Register in Cast Border—Fig. O



Semi-Steel Register—Fig. M



Economy Model with Round Corners



The Plain Lattice Design Is Made in Various Size Mesh
Wrought Metal Grilles

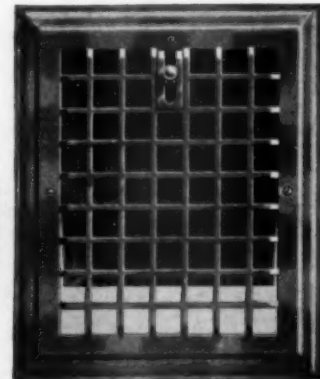
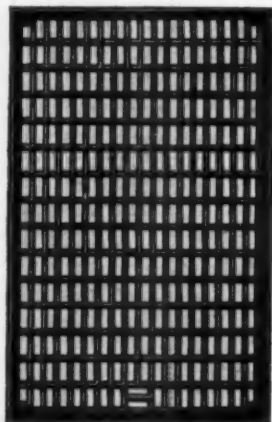
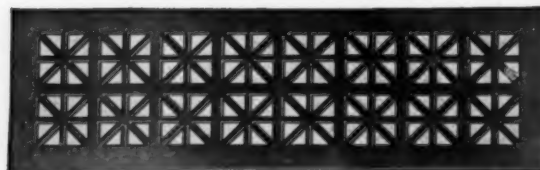


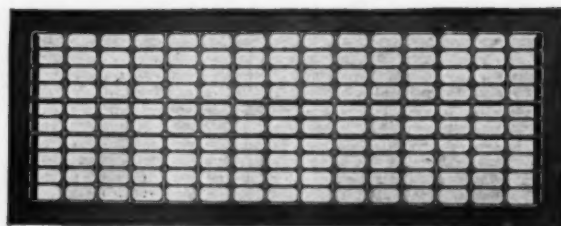
Fig. A Vertical



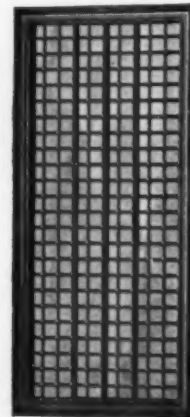
Cast Cold Air Face—Fig. Z



Design No. 12A



Class 255 Cold Air Face



Steel Cold Air Faces—Fig. T

WHO'S WHO, WHERE!

BLUEFIELD, W. VA.—The Woodrum Tinning Co. has been awarded the roofing contract for Emory & Henry College, Emory, Va., the new dormitory at Davis Stuart School, Lewisburg, W. Va., and the Christian Church Educational Building in Bluefield.

OMAHA, NEB.—Bjornson & Wesel Co., 1411 Davenport Street, has been awarded the sheet metal contract for Memorial Building in that city. The General Bronze Corp., Long Island City, N. Y., has bronze work contract, and the Art Metal Construction Co., Jamestown, N. Y., has the metal door and trim contract for same building.

LOS ANGELES, CAL.—The L. C. Wilson Co. has been awarded the sheet metal contract for the Schulte United Stores building in that city.

The Eld Metal Co. has begun the construction of a 20 by 30 foot shop building on Randolph Street, in the Maywood district.

Richard R. F. Lehman and L. H. Polderman have engaged in the manufacture of sheet metal products under name of Alsteel Products Co.

PORTLAND, ORE.—The Kleenair Products, Inc., has been chartered to engage in the heating and ventilating appliance business, with a capital of \$5,000, by W. M. Scherping, J. M. Scudder and Sylvia Linstadt.

Ray F. Becker & Co., 146 Page Street, have been awarded the sheet metal and roofing contract for chapel of Woman's Home Missionary Society of Methodist Church.

Raymond J. Metzler and Margaret A. Metzler have opened a sheet metal works under the name of Standard Metal Co.

SHALLOTTE, N. C.—S. H. Heffner wants to contract with some sheet metal manufacturing plant for the manufacture of small stamped articles.

WICHITA, KAS.—The Davidson Sheet Metal Works, 701 N. Main Street, has the heating and sheet metal work contract for residence

of Grover C. Wright, in that city.

SAN ANTONIO, TEX.—The Voss Artistic Scroll Metal Works, Inc., 101 Columbus Street, has increased its capital stock to \$55,000.

HIGHMORE, S. D.—C. H. Carpenter has engaged in the sheet metal and hardware business.

ATLANTA, GA.—The Atlanta Sheet Metal Works, 709 Marietta Street, has been awarded the contract for metal toilet partitions in buildings for A. & M. College, Alcorn, Miss.

COLUMBUS, PA.—The Armstrong Furnace Co. has let the contract for construction of industrial buildings to cost about \$50,000.

MADISON, WIS.—Wolff, Kubly & Hirsig, 401 W. Gilman, have been awarded the sheet metal contract for the First Congregational Church, at \$20,142.



"American Larson" Ventilator.

From Boysen Heating and Sheet Metal Works, 3827 North Kedzie Avenue, Chicago.

Please advise us who makes the "American Larson" ventilator.

Ans.—The American-Larson Ventilating Company, Keystone Boulevard, Pittsburgh, Pennsylvania.

"Pfeifer" Clip.

From Wheeling Corrugating Company, 2547 Arthington Street, Chicago.

Can you tell us who makes the "Pfeifer"?

Can you give us the address of the manufacturers of the "Pfeifer" clip?

Ans.—This is made by William Pfeifer, 473 Greenwich Street, New York City.

Advertising Cuts.

From Eugene Gissinger, Wauwatosa, Wisconsin.

Will you please tell me who makes advertising cuts.

Ans.—Advertising Art Service, Meriden, Connecticut.

"Reliable" Oak Heater No. 17.

From Waite Hardware, Westfield, New York.

Can you tell us who makes the "Reliable" Oak Heater No. 17?

Ans.—Toledo Stove and Range Company, Toledo, Ohio.

"Knowles" Mushroom Ventilator.

From Brouillet Sheet Metal Works, 271-281 Iowa Street, Dubuque, Iowa.

Please advise us who manufactures the "Knowles" mushroom ventilator.

Ans.—Knowles Mushroom Ventilator, 204 Franklin Street, New York City.

Quick Drying Oil

From M. L. Kistler, Alexander City, Alabama.

Who makes a quick drying oil for paints?

Ans.—James B. Sipe & Company, Chamber of Commerce Building, Pittsburgh, Pennsylvania.

"Heato" Furnace

From Ashland Sheet Metal Works, 3854 North Ashland Avenue, Chicago.

Can you tell us who makes the "Heato" furnaces?

Ans.—Robinson Furnace Company, 205 West Lake Street, Chicago.

Galvanized Stove Bolts

From Jack Stowell, 12-14 South La Salle Street, Aurora, Illinois.

Please tell me who makes $\frac{1}{4}$ and $\frac{3}{16}$ -inch galvanized stove bolts.

Ans.—The Kirk-Latty Company, 1971 West 85th Street, Cleveland, Ohio.

"Knowles" Mushroom Ventilators

From Brouillet Sheet Metal Works, 271-281 Iowa Street, Dubuque, Iowa.

Can you tell us who manufactures the "Knowles" mushroom ventilators?

Ans.—Knowles Mushroom Ventilator Company, 204 Franklin Street, New York City.

Repairs for "Pep" Furnace

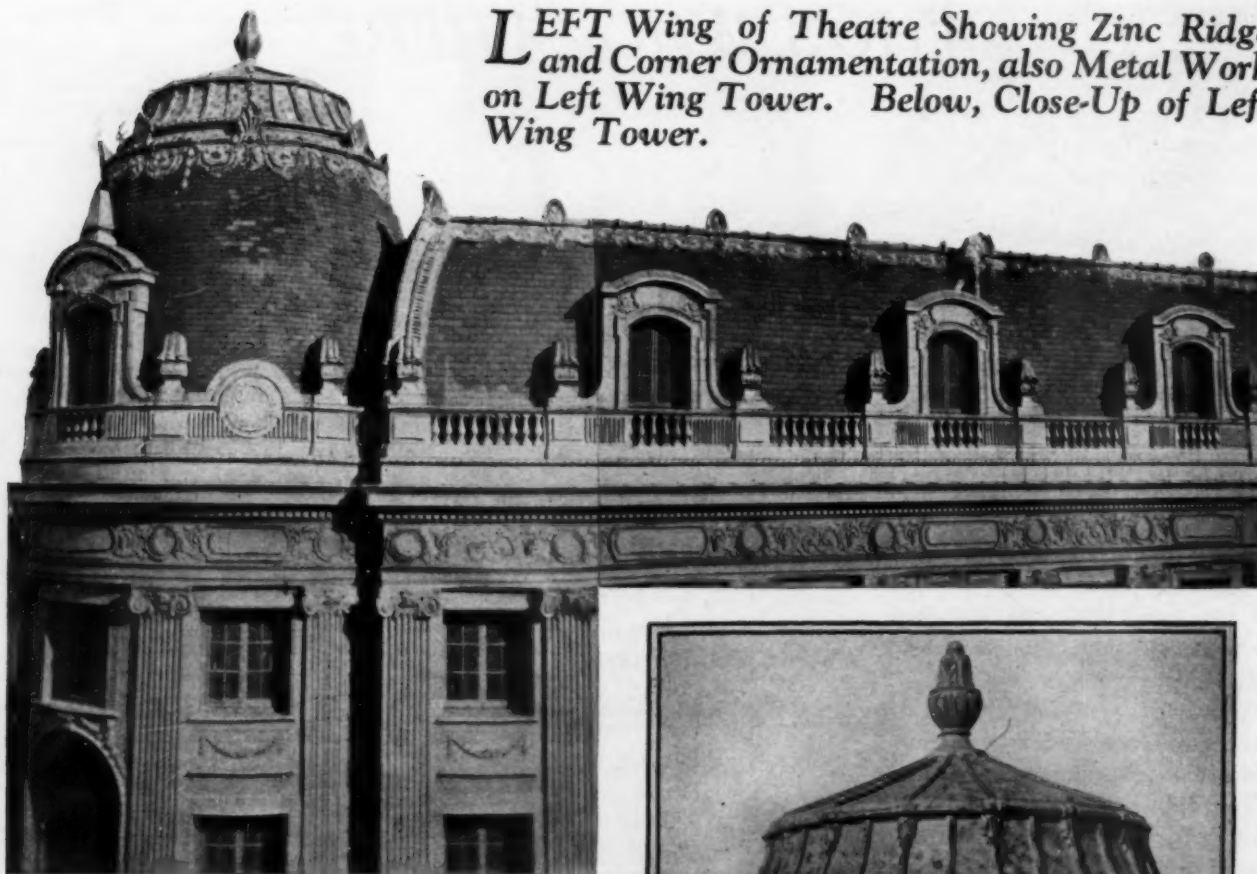
From J. W. Thrasher, Macomb, Illinois.

We want to buy repairs for the "Pep" furnace and, therefore, should like to know who the manufacturers are.

Ans.—Williamson Heater Company, Cincinnati, Ohio.

(Continued on Page 109)

L EFT Wing of Theatre Showing Zinc Ridge and Corner Ornamentation, also Metal Work on Left Wing Tower. Below, Close-Up of Left Wing Tower.



(Continued from Page 103)

and Henry Staar, are vice president, treasurer and secretary, respectively, of the company.

The heating, ventilating and air conditioning equipment for the Paradise theater was installed by B. F. Reynolds & Company, 118 West Ohio Street, Chicago, while the big outdoor signs are the products of the Commonwealth Sign Company, 4543 West Lake Street, Chicago.

These zinc ornaments as they now appear in their final shape on the theater are painted a dark red, over which is placed a greenish color, making a beautiful appearance which blends well with the green tile which covers the towers and the left wing of the theater. In two of the illustrations the painters can be seen applying the final dressing to the zinc.

Here is a piece of sheet metal work which every sheet metal contractor cannot do, because of the vast amount of equipment required to enable the workers to climb around the building and hoist the materials into place. It also requires

considerable skill on the part of the workers, because of the fact that they are working so high above the ground, producing considerable of a hazard in connection with the work. One little slip and the worker would go zooming for a tail spin to the ground 150 feet below. But to see the workmen of the Frank Staar & Sons organization stepping around on these dizzy heights one would think they were more like mountain goats than men, in their total disregard for danger as they scale the heights. But that is their work and they think no more of walking along the topmost ridge of a building of type shown than the ordinary person does of walking along the street. It is wonderful how the human organization can adjust itself to its environment. Of course, every now and then one of

these men does make a slip and goes crashing down to earth, and then if the sheet metal contractor has not protected himself adequately in the way of insurance, he is pretty apt to score a loss instead of a profit on that job.

The forming of these ornaments also involves considerable work which is not apparent on casual observance. One may think that their formation requires only a set of dies and a press large enough to handle them, but there is considerable more than that to the process. In the first place the dies must be formed, and almost each job requires something entirely different and distinct from what has gone before, which makes each job require a separate and distinct set of dies. And anyone who knows anything about the idiosyncracies of some architects can

well appreciate what the forming of these jobs involves.

After the design is decided upon and the dies are made, then comes the actual forming of the metal itself. The process of forming is no bed of roses either. In the first place the metal cannot be placed between the dies and pressed into the shape desired with one pressing. The sheets must go through a special process of heating before the pressing begins and then it requires more than one pressing to bring the detail of the design out into clear relief. One stamping makes only the faintest suggestion of the design on the metal. Many times, too, the metal is found to have broken under the pressure of the dies, and this causes more work either in soldering or in making an entire new sheet.

Of course, the stampers, such as Friedley-Voshardt, who did this job, do not always follow the exact suggestions of the architects, because if they did they would run the cost of the final job higher than the architect himself would be willing to stand. And so for that reason they try to approximate the archi-

tect's suggestions as nearly as possible, but make suggested changes in keeping with the amount of money they think will be forthcoming on the final job. Architects are idealists for the most part. They have to be, because their work is concerned chiefly with visualization in the abstract, and they are very apt to overlook the practical side, although there is no reason why they should.

As on this Paradise Theater job, Mr. Kahlanberg, Jr., of Friedley-Voshardt Company, told me that the architect had suggested some very elaborate design for the corners of the main tower. This design would have run into considerable money because of the frequent changes in the dies that would have been neces-

sary. When the attention of the architect was called to the added expense of the job, he replied, "Oh, that's all right; they want something elaborate and are not concerned with the expense."

But Mr. Kahlanberg knew that when the final bill for the work was rendered there would be considerable adverse criticism offered. Therefore, with a deft suggestion, he switched the architect to a design the expense of which would be considerably less, while almost the same effect which the architect had in mind would be produced.

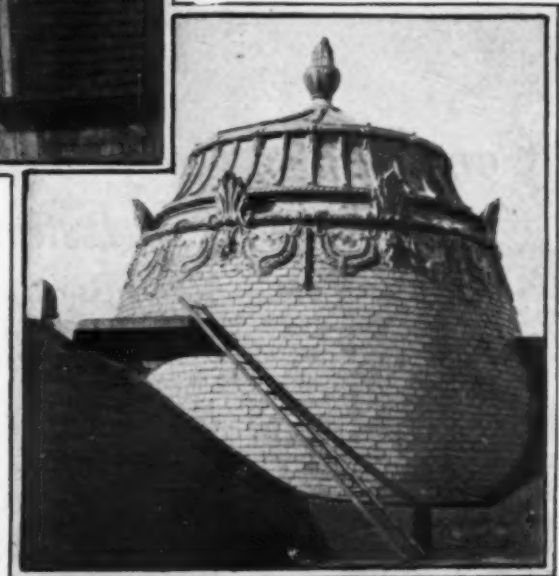
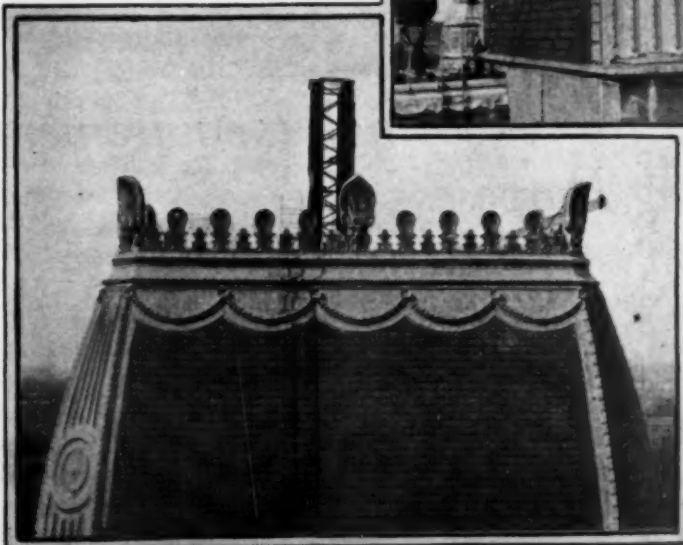
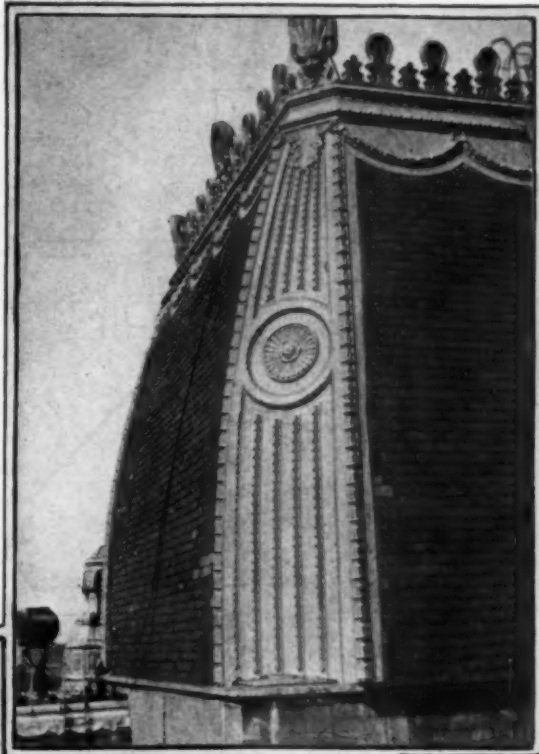
Learn All You Can From the Salesman

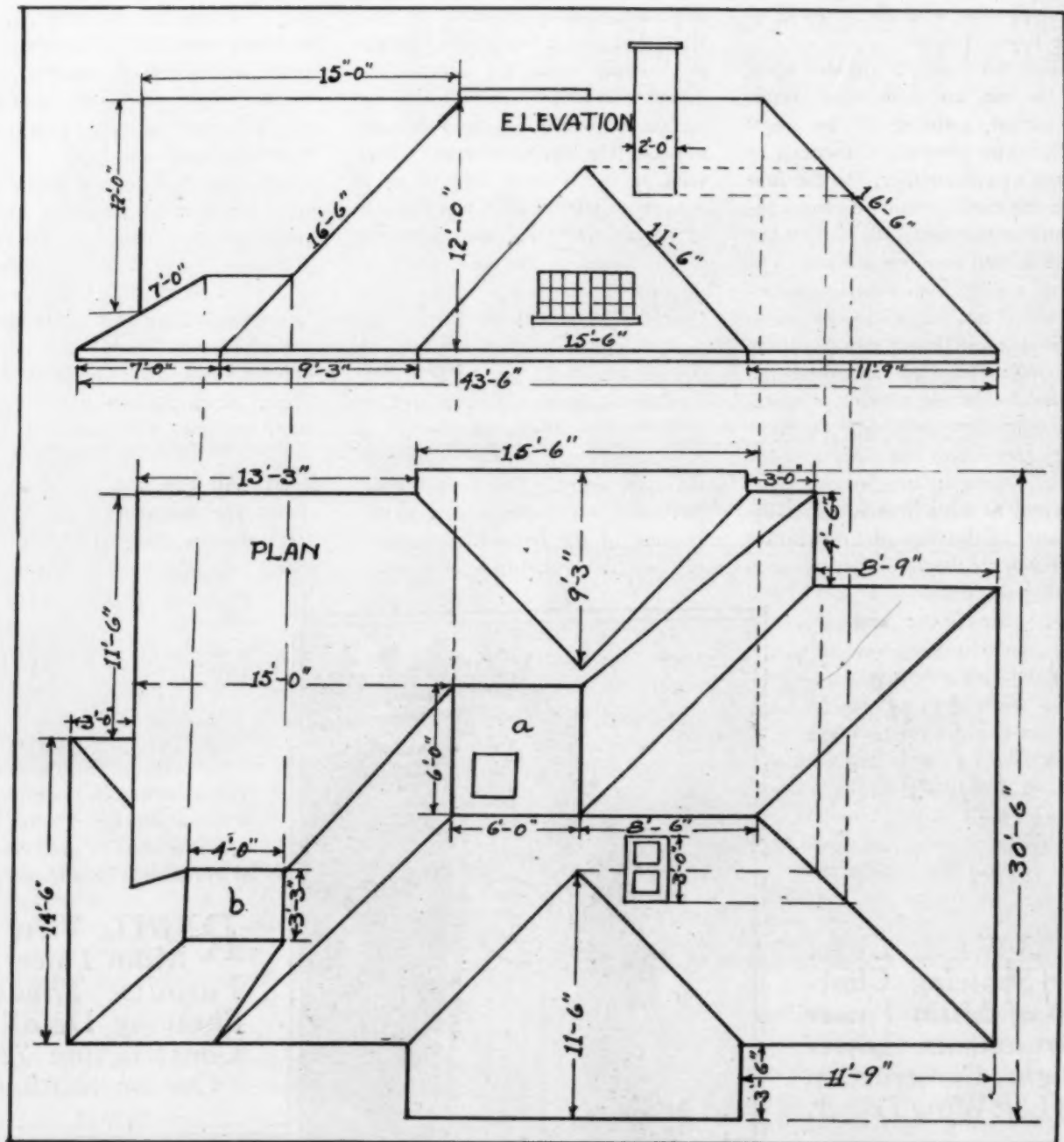
If you are the sort of man who won't take advice from anyone, you are going to miss many opportunities for help which would benefit you greatly.

When a man grows a big head, feels that he can get along without the assistance of anyone, then others may soon note a decline in his effectiveness and success. The big man is on the alert to get every bit of knowledge possible to gain.

**RIGHT, View of
Main Tower of
Paradise Theatre
Showing Detailed
Construction Zinc
Ornamentation.**

**LOWER Left,
Showing Close-
up of Main Tower
Ornaments. Lower
Right, Construction
of Left Wing Tower.**





Roof Designs for Estimating Purposes

Computing Roof Areas for Roofing Requirement Estimating Purposes

Division of Roof's Area Into Triangles and Rectangles One Method

By O. W. KOTHE, Principal St. Louis Technical Institute

IN THIS article sheet metal men who cater to roofing have ample opportunity to exercise their ability and surface measurement calculation. There is no easy way of ar-

riving at this. The safe way is to make a diagram of the roof to be covered, drawn to a certain scale, then figure each part of the roof separately. In this way all the dif-

ferent parts can be added together and the total will make the number of square feet of roofing required.

Thus in our plan and elevation we have a drawing that was sent in

by C. F. Van Liew, Minneapolis, which has a great many gables, offsets, valleys, hips, etc., in its make-up. We see two flat decks, as at a and b, while the rest of the roof will naturally be cut up into triangles or parts of triangles. Those spaces that cannot be conveniently figured are broken up into such shapes as will make calculation easy. In that way each part is figured on its own merits, and the several parts when added together will give the total. A roof of this kind is not an ordinary example, owing to the many different hips and valleys, ridges and gables required.

Then, too, men who are not used to roofing will ordinarily waste twice as much roofing as those who are experienced on this class of work. The difference lies largely in the ability of the workman to start his roof in such positions that the metal which falls off on one hip or valley can be worked in on another one. This takes a little more work than if new metal is used, but it works in the old pieces which would otherwise be waste.

Most readers are no doubt acquainted with the method of figuring triangles. The general rule is the base times the altitude divided by 2. Thus in a roof like this we have the altitude given and we also have the slant height given as 16 feet 6 inches for the main roof; then take the end of the roof to the right, which has a triangle and which measures 30 feet 6 inches, minus 3 feet 6 plus, 4 feet, 6 or 8 feet together, making the base of the triangle 22 feet 6 inches, while the altitude is 16 feet 6. Observe this end is really two triangles, where the base of each is 11 feet and a quarter, which if multiplied by 16.5 gives us 235.62 square feet. Notice this would be the area of this rear portion and it would not be necessary to divide by 2, since both triangles can be reversed to make a rectangle of the size we figured. In this way each of the parts of the roof would be figured and when this would be accomplished, then some of the parts must be subtracted such as where gables fit against the side

of roof in order to know how much is to be taken out. The figures of Mr. Van Liew are given this way, and the reader who is interested can check up and figure over each part and see if he arrived at a similar quantity.

Area (108' 0" x 45' 0") minus (39' 6" x 9' 3") plus (48' 0" x 9' 0")

equals 4,860 square feet minus 365.375 square feet, plus 432 square feet, or 4,860 square feet minus 797.375 square feet equals 4062.625 square feet of the area in the roof. This will give our readers something to do and lots of good practice in using their mathematical ability as well.

Baltimore Sheet Metal Men Start Work for National Convention

Plan to Make Silver Anniversary of National Biggest Convention Ever

The Baltimore Convention Committee, hosts of the twenty-fifth annual convention of the National Association of Sheet Metal Contractors, held their first meeting October 11th, 8 p. m., in their association rooms, Bus Terminal Building, Baltimore. Baltimore has never entertained a national convention before.

A large attendance was present. The meeting lasted three hours, going into all the details necessary to start and finish the work in connection with the convention.

All of the committees were named and by the 1st of December the committee expects to be functioning 100 per cent.

The dates of the convention were not announced, pending the National Association directors' approval, which will be forthcoming in the next few days.

The Baltimore Sheet Metal Association, according to W. A. Fingles, chairman of the national convention, is planning to put on the largest convention the National has ever held.

The committees appointed are as follows:

Finance Committee

Bevans, Samuel O.
Blandford, William G.
Bullen, George R.
Cotton, William E.
Danzer, Roy.
Fingles, W. A.
Herring, William H.
Kunzelman, John.
LaMotte, John.

Landerking, Philip H.
Seiler, M. A.
White, John O.
Zeller, William F.

Committee Chairmen

Reception—Danzer, Albert.
Transportation, autos, etc.—Cotton, John.
Finance—Fingles, W. A.
Publicity—Fingles, W. A.
Program—Herring, William H.
Entertainment—Landerking, P. H.
Printing—Summers, E. M.
Ladies—Ward, W. F.
Treasurer—White, J. O.
Secretary—Landerking, P. H.

NOTES AND QUERIES

(Concluded from Page 105)

Chimney Draft Gauges

From General Steel Wares, Limited, 177 King Street, West, Toronto, Canada.

Please give us the names of manufacturers of chimney draft gauges.

Ans.—E. Vernon Hill Company, 64 West Randolph Street, Chicago; The Hays Corporation, Michigan City, Indiana; Ellison Draft Gauge Company, 214 West Kinzie Street, Chicago.

Blowers for Forced Draft

From J. S. Raymer and Son, Lena, Illinois.

Kindly advise us who makes blowers that can be used for forced draft on chimneys.

Ans.—Johnson Fan and Blower Company, 1319 West Lake Street, Chicago; American Blower Company, Detroit, Michigan, and Clarage Fan Company, 333 North Michigan Avenue, Chicago.

RANDOM NOTES AND SKETCHES

L. W. Millis of the Security Stove & Furnace Manufacturing Company, Kansas City, Missouri, sends in the following:

Last summer a certain furnace dealer went out of town on a hurry call. For trousers he had on overalls and did not have time to change. The job proved to be a dirty one and the overalls suffered greatly. Rather than return on train so dirty he went into a clothing store and bought a pair of trousers. He also found a bargain in a pair for his young son. He caught train, went into wash room, threw dirty overalls out of window, opened package and found the clothier had only put the boys knee pants into bundle. However, the boy was large for his age.

* * *

Furrier: "What you say may be true, madame, but furs have gone up in price."

Mrs. Albert J. Wagner: "I suppose because it costs the animals so much more to live, eh?"

* * *

Joe Mattingly Thinks This Is Rather Harsh

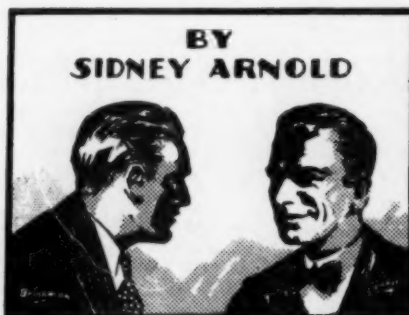
A man is something that can see a pretty ankle three blocks away while driving a motor car in a crowded city street, but will fail to notice, in the wide, open countryside the approach of a locomotive the size of a schoolhouse and accompanied by a flock of forty-two box cars.

* * *

Always Have the Last Word

Two furnace salesmen who happened to be traveling north on the same train fell to discussing the dental profession.

"You know, old man," said the first, "my dentist has mastered the art of being gentle. He's got gen-



tleness down to such a fine point that his patients fall asleep while he's pulling out their teeth."

"Oh, that's nothing," retorted the other, "my dentist is so gentle that I always arrange for my photos to be taken when he operates, because that's the time when my expression is the most pleasant."

* * *

Lecturer: "I calculate that the end of the world will come in 217 million years."

W. C. Markle, of audience (in great agitation): "How many did you say?"

Lecturer: "217 millions."

Mr. Markle (sitting down with great relief): "I had such a fright — thought you said 117 millions."

* * *

Harry Jones: "Why don't you advertise?"

Homer Setch, sheet metal contractor: "No siree, I did once and it pretty near ruined me."

Harry: "How's that?"

Homer: "Why, people came in and bought dern near all the stock I had."

* * *

A man died the other day and the preacher was dispensing the salve that is usually spread during a funeral sermon. In the course of

the sermon he said, "The deceased was torn from the arms of his loving wife, who thus is left a lonely, disconsolate widow at the early age of 25 years"—"Twenty-two, if you please," sobbed the widow from behind her handkerchief.

* * *

"Some one sick at yo' house, Mis' Carter?" inquired Lila. "Ah seed de doctah's kyar dar yistidy."

"It was my brother, Lila."

"Sho'! Whut's he got de matter of him?"

"Nobody seems to know what the disease is. He can eat and sleep as well as ever. He stays out all day on the porch in the sun and seems as well as any one. But he can't do any work at all."

"He can't—yo' say he can't work? Law, Mis' Carter, dat ain't no disease. Dat's a gif'!"

* * *

"There's no use in denying it," observed Farmer Filkins. "Old Tumbleton is the man to send to Congress."

"I don't know so much about that," persisted Farmer Fowler.

"Well, I do. He's for the farmer every time. Why, he says if he's elected he'll introduce a bill to stop the importation of French fried potatoes."

* * *

"Lay down, pup; lay down!" ordered the man. "Good doggie—lay down, I say."

"You'll have to say 'Lie down,' mister," declared a small bystander. "That's a Boston terrier."

* * *

Good Judgment

"Is your husband trying anything to cure his deafness?"

"No; he has postponed it until the children have finished their piano lessons."



Quality Selling FLAYS OPPOSITION for Warm Air in High-Class Chicago Residence

Steam and Hot Water Fade as Competition—Bank Loan Differential Opposition Easily Overcome

RETAIL selling of warm air heating systems is a matter of winning the confidence of the person to whom you are making your appeal. In fact, any other method of selling, assuming at the outset that the salesman has a quality product to market, cannot be expected to produce permanent results. By permanent results is meant the sales that are made as a result of word of mouth advertising, put into circulation by the satisfied customer—the best kind of advertising a business man can get, which is that kind of publicity money cannot buy.

An actual incident that occurred in the warm air heating industry will serve to illustrate the point made. Ed Stahler of the G. & S. Stove and Furnace Company, 4224 West North Avenue, Chicago, learned through the ordinary avenues of business that a certain man was intending to build a residence for himself and family. The dwelling was to be a fairly good sized home, but in a neighborhood where practically all around it the homes were equipped with either steam or hot water heating systems.

Ed called on the man, told him the story of warm air heating, its qualifications and included in his sales talk the method of making the installation according to the Standard Furnace Code, a copy of which he handed the prospect. He took particular pains to show the prospect how he could employ the Code to check up on the installation himself. Of course the prospect, wishing to have the best that money could buy in the way of health-giving apparatus in his home, was very much enthused over the prospect of getting this wonderful system described to him by Mr. Stahler.

However the cinching of the contract was not yet complete. As

mentioned in the beginning of this article, the home was located in the heart of a suburb into which warm air heating had not been able to penetrate. The prospect had a number of friends not only in his own neighborhood, but in other sections of the same territory, who, of course, all had steam or hot water systems. They naturally talked against warm air to the prospect,

TELLING 'EM SELLING 'EM

Quality products. Quality selling. A prospect with intelligence enough to the difference between a good and a poor product. This combination sweeps all opposition before it in the matter of selling warm air heating systems.

No one could possibly encounter more opposition than did Mr. Stahler in this instance. But because he took a definite stand and sold on the basis of quality he won out. This tale of encounter with stiff opposition is an inspiration to every warm air furnace installer.

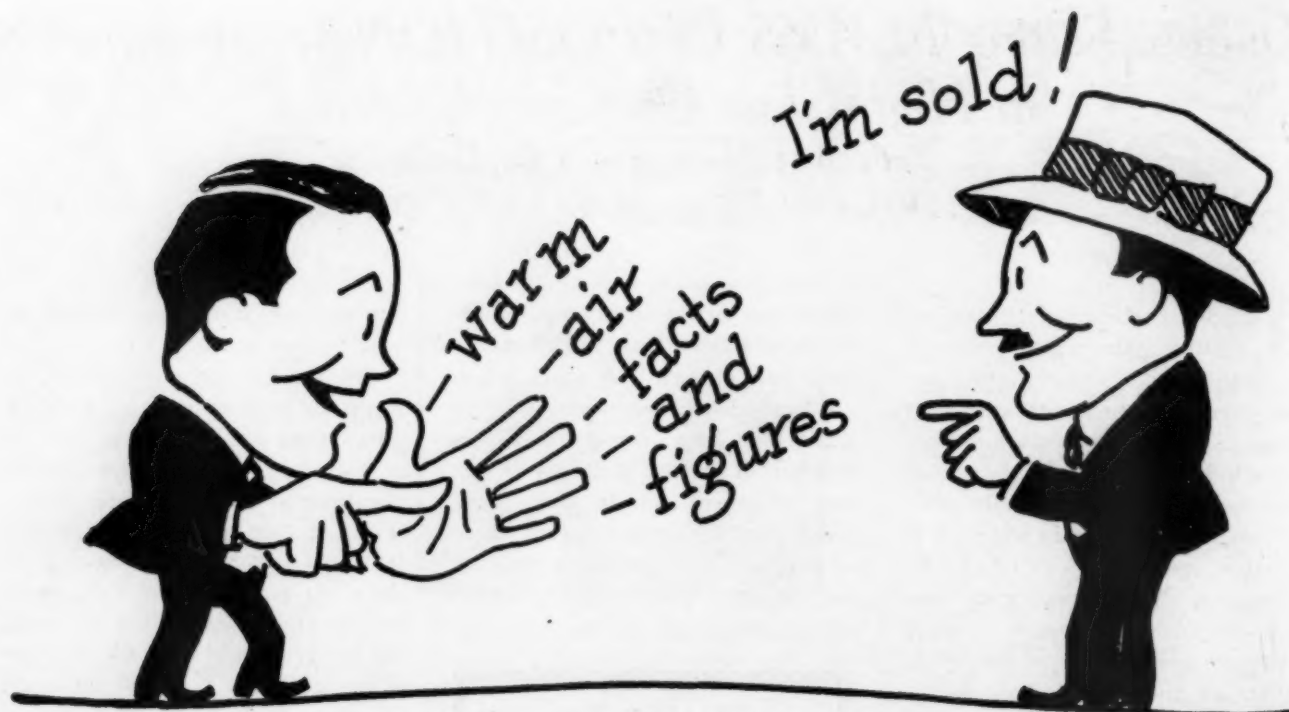
telling him that warm air was the dirtiest and the most unsatisfactory system he could ever get; that he would be sorry if he put this type of heat into his new home. Then too the steam and hot water men were not letting any grass grow under their feet to get this contract. In short things looked about as dark for warm air heating system in this prospect's home as it could ever look anywhere. The prospect began to have doubts about the advisability of going into such a sys-

tem for which no one seemed to have a good word.

This thought occurred to him: "If warm air heating is such a marvelous system as Ed Stahler says it is, then why is it not more generally known; why do people talk it down so much? Perhaps I had better go slow on this thing, but on the other hand I know Ed Stahler well enough to know that he would not try to mislead me. I'll have another talk with him and tell what all these other birds have to say about warm air heating. I'll at least give him a chance to explain." So back he comes to Ed Stahler with his tale of grief about warm air heating.

Ed, however, stuck to his guns, showing his prospect by means of cold reasoning that the warm air heating system with a Standard Code installation had steam or hot water backed off the map. He produced research bulletins to back up the assertions he made regarding the superiority of warm air as a heating medium from the standpoints of health, economy, flexibility, cleanliness, and the absence of unsightly radiators in all of the rooms. The prospect was a reasoning individual, and armed with the facts given him, he went back to face his friends with the determination to put in warm air in spite of all opposition. Needless to say that Ed Stahler had all the ordinary competition to buck—the cheap furnace installer who thinks he has no overhead and can, therefore, cut his price to the minimum and a hundred more silly objections to the system.

But to this point no one of them had succeeded in shaking the prospect's confidence in the G. & S. Stove and Furnace Company or in the partners as individuals. He was sold because he had been sold right.



Ed Sells 'Em and Then Finds to His Sorrow That He Has a Hard Time Keeping Them Sold Until the Job Is Safely In.

And the way he was sold—the only proper way to sell any warm air heating prospect of the higher class was on the basis of quality product. Why spoil an otherwise perfect home by installing a heating unit that would require a lot of unsightly radiators in the rooms where they would be open to the view of everyone entering and act as the most wonderful dust collectors ever imagined?

The matter of circulation was no stumbling block in this installation, because a fan could easily be attached to the heater and thermostatically operated.

One of the hardest obstacles that Mr. Stahler had to overcome in selling this job was the fact that the bank had refused to loan the man as much money on the home if heated with warm air as when heated with steam or hot water. The man building the house was doing it on borrowed capital, consequently a differential of \$700 or \$800 in the loan which he could secure meant considerable to him. But Ed proved his mettle. So well had he done his selling job that in spite of all the obstacles which presented themselves he won out, and get this, he won out, taking the job at a high-

er figure than was asked by the best steam or hot water contractor that had figured on the job.

The prospect was sold on the quality of heat he was going to get and on the convenience that would be his with this warm air heating system. He was sold on the idea that he would save many times over in doctor's bills and worry consequent to illness of the members of his family the difference between the price he was asking and that which the cheap furnace man or the hot water or steam job.

The men who say that warm air heating systems cannot be sold because there exists a differential in the loan which the banks will make or a hundred and one other reasons are only kidding themselves and in the meantime losing a lot of nice fat profits which they might enjoy if they only had gumption enough to learn how thoroughly how to sell a warm air heating system on the basis of quality.

Fred R. Dowsett Becomes General Manager of Beckwith

As will be noted elsewhere in this issue, The Beckwith Company,

Dowagiac, Mich., has a new vice-president and general manager in the person of Fred R. Dowsett. Mr. Dowsett is a newcomer into the furnace industry, having previously been long identified with the successful production and marketing of automobiles.

Securing Double the Effect of Window Displays

When the condition exists that the entrance to a sheet metal or warm air heating shop is located quite a distance in the rear of the street facing and the side of the entrance opposite the window display does not have a glass facing, the sheet metal or warm air heating contractor can secure double the value of his own window by placing a series of mirrors just opposite his display. These mirrors will then reflect what is placed in the window and double the effect.

The Federal Census Bureau estimate for July 1, 1928, gives the population of Chicago as 3,157,400. This is an increase of 455,697 over the 1920 figure.

Getting Under the Sheet Metal and Furnace Contractor's Skin

*Tells A. L. Mayers to Take Heart—
A Lot of Others Are in His Boat*

By WILLIAM R. NEAL

THE articles on overhead expense which appear often are very instructive, but they are not to be compared to the beneficial message such as the article, "A. L. Mayers Could Not Have Reduced His Furnace Price," September 29, 1928, page 191.

This analyzing a given actual job is great work. I cannot understand why we cannot have it as a regular diet.

If Mr. Mayers thinks there is a wide gap in his home field on furnace bids, then let him take heart and be encouraged, by reading of conditions in other fields, certainly something powerful is needed in many localities to stabilize prices.

Recently I lost a \$1,400 contract which was bid in for \$800, and same day was awarded another contract where I was high man, but on this latter job the general contractor had an engineer inspector right on the job every minute, besides the architect also had an expert architect-engineer there every minute, both of these overseers had nothing to do at all except to demand that every word of the specifications and general conditions of the job were carried out. The total cost of the job on which our metal work was a very small part, was a \$70,000 building. The total worth of the building on which an \$800 metal job was installed was about \$12,000. On the \$12,000 job no printed specifications were furnished, all three contractors submitting bids on this job had in mind a certain standard of work which was customary for their individual shops. But there was no one on the job to demand any particular specification.

One thousand four hundred dollars, \$1,000 and \$800, nothing could be much wider apart than that.

When the middle man and the high

man compared notes, the \$1,000 man stated, but say "High" man if you had obtained that job and done all the things your specifications called for, you really were the low man. This job is a 45 square hip roof, 300 feet 12-inch girth galvanized iron gutter 100 feet 3 inches conductor pipe one dozen elbows. All old gutter and pipe to be removed also tear off old 10 by 14 metal shingles which had been daubed up with tar. This four apartment dwelling was occupied during the time the work progressed. New roof standing seam 40 lb. coating N. & G. Taylor Target & Arrow Brand.

We never set the woods on fire, but we are going to some day, just in order to have a fire sale. We will need the insurance money to get out of town, at least that is what has been said against us many times. Let me say we obtain a number of jobs where we are high figure. Our slogan is "Not How Cheap, But How Good." Let me tell Mr. Mayers what one customer told a price cutter when the price cutter attempted to take this customer away from us on price cutting—"Say Mister we may need what you say we do, but our sheet metal contractor has not told us we need it, and even if he did tell us we needed this work done you would not have a look in."

Williamson Heater Company Compiles Folder With Unusual Success Story

The furnace cleaning route is conceded by most furnace men in the "know" to be one of the best methods of getting a line on prospects for new furnaces and furnace repairs.

In line with this the Williamson Heater Company, Cincinnati, Ohio,

has recently produced a very attractive booklet entitled, "A Sales Plan with Vac-u-Clean," which is the story of a furnace dealer's success and the method he used.

The story opens with a sheet metal and warm air heating contractor doing a moderate volume of business and plugging along. The time comes when his son is taken into the business with him. The son is in real earnest in his desire to make a success of the business, and he like a lot of sons who have gone into their fathers' businesses, feels that the father is too backward in a lot of his ideas. The son tries to put over some hot stuff, but for some reason or other it does not go over so hot, and the father puts his foot down on the added expense.

In course of time the father dies and leaves the son to run the business his own way. Some of the experiences of the son going on his own hook and how he finally hit upon the way to build up a real furnace business are also given in the story, but in order to find out what he did it will be necessary for you to write to the Williamson Heater Company, Cincinnati, Ohio, for a copy of this story. It will pay you to get a copy of this story and read it over. Therein you may find the solution to your own troubles. And while writing also ask for the folder on the "Spee-Dee-Heet" furnace fan. This also is something that will interest you.

The trend of modern business is to centralize and to fix responsibility upon department heads. More and more emphasis is laid upon centralized and responsible management as the principal factor of business success. It is the trend of modern business to reduce overhead expense.

ADVERTISING BUILDS BUSINESS

(Concluded from page 100.)

3—"Yes. To advertising."

4—"Price."

McClure-Johnston Company,
Pittsburgh, Pa.

1—"Yes."

2—"Yes. It also increases overhead."

3—"Yes. Mostly by associations and some effort by the sheet metal contractor."

4—"Price."

L. D. Berger Company,
Philadelphia, Pa.

1—"No."

2—"Growing."

3—"Yes. Due largely to efforts of the associations. A few sheet metal contractors are attempting to do something, but there is still lots of room for improvement."

4—"Would say a greater percentage are interested in bettering their work."

There were also some who returned the letter, with the questions answered, but who indicated that they did not wish to have their replies published.

**P. J. Fleming of Gummey
McFarland & Company,**
Philadelphia

"Replying to your letter of October 9th, in reply to your direct questions regarding our opinion of present conditions, would say the tendency of hand-to-mouth buying by the sheet metal contractors seems to have reached its peak in about July of this year. Since that time we have found them more liberal in their views for ordering stock, and believe the tendency now is to carry a slightly greater amount of stock on hand than was the case for the previous twelve months.

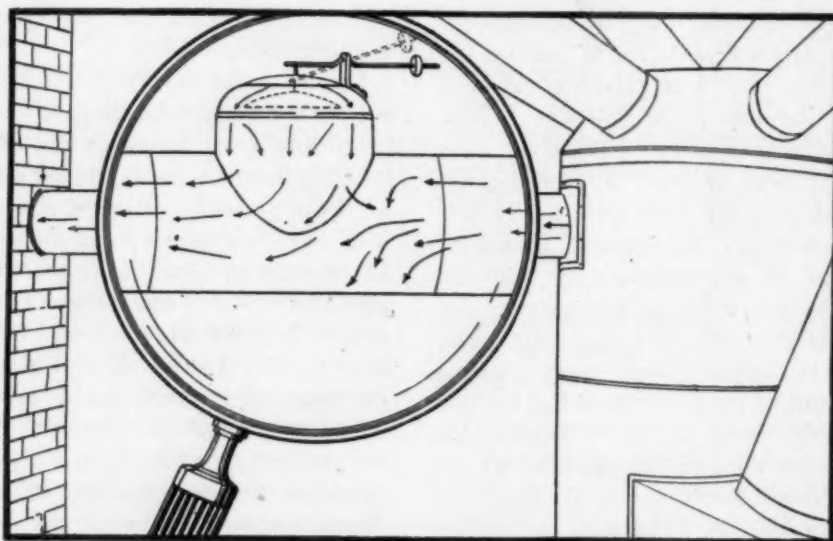
"Insofar as the sales of sheet metal, there has been a slight increase in our tonnage consumption the past year, and we feel the general advertising of the metal associations has been of considerable assistance in strengthening the demand.

"The question of price, however, is still a bone of contention, and we believe with 75% of the contractors

this is the main item of consideration. In building operation work of small homes, of which there is considerable done in Philadelphia, price only is what counts. We do not believe there is any marked substitution of materials, but we believe where no specifications are made as to gauges, the lightest and cheapest material is used."

Fuel Saver that Actually Saves Fuel by Controlling Draft New on Market

Every furnace installer knows that draft is necessary to a fire. Without adequate draft the furnace equipment is practically useless. But there are drafts and drafts. And the ideal situation is a controlled draft which keeps the fire burning at an even tenor of its way regardless of what the wind is doing outside. This control must be automatic of course.



Showing Appearance of Draft Control Device

To meet these needs a little device known as the Evenheat Automatic Draft Regulator and Fuel Saver is being placed upon the market by Carl O. Staley & Company, Box 6, Congress Park, Illinois. The accompanying illustration shows the device installed.

There is nothing complicated about the instrument. It has no moving parts to get out of order. is very easily installed and is so arranged that it operates positively and automatically. It can be installed

on smoke pipes from six to ten inches in diameter.

This device, the manufacturers say, will cut fuel bills from 10 to 20 per cent yearly. Because of the fact that it maintains an even heat throughout the day regardless of the number or extent of atmospheric changes during the day, the furnace is made into a real heating plant, giving it longer life and making it less subject to the necessity for repairs. It is suitable for installation on any type of heating unit.

This device is going to be handled through local furnace dealers, and for that reason furnace installers who are interested in the instrument should not hesitate to get in touch with the Carl O. Staley & Company, Box 6, Congress Park, Illinois.

The selling price is low enough to make it attractive to every home owner buying a furnace and the

profit to be made from it is ample to make it well worth while for the furnace installer to investigate.

George E. Lauer,
Oakland, Cal.,
Likes American Artisan

George E. Lauer, Oakland, Cal., writes: "I am sending my check for a copy of Williams' book, 'Tinsmith Helper and Pattern Book.'

"I read every copy of AMERICAN ARTISAN through and receive much valuable information from it."

Steel Demand Ebbs—Production Holds

Tin Prices Unchanged — New Records Being Established in Copper

NEW business in iron and steel, considering all products, has subsided to a parity with production, and for the first time since mid-September does not afford a margin for backlogs.

Orders for the month to date, however, maintain a slight lead over the corresponding period of September, and October will approximate last month on a tonnage basis even though the crest of buying has passed.

Deliveries of finished steel continue to disappoint consumers, despite an average operating rate in excess of 85 per cent. Some important users, as a result, are specifying a little farther ahead than usual.

Each passing week confirms the high expectations for the fourth quarter and the momentum already acquired seems to insure the present gait, or substantially it, for the remainder of the year.

The railroads are also slightly more interested in equipment. In the face of approaching inventory-taking by some of the larger automotive producers, Detroit looks to fourth quarter output as the highest of the year.

The copper industry established additional new records in September. It appears certain the year will show a new tonnage figure, both in domestic use and total trade.

Beyond strengthening previous convictions on the strength of the situation, however, the September figures have had no effect on the market.

All metals held steady during the past week, except for the usual fluctuations in tin. Buying of all metals, including copper, but excluding lead, was light. The latter was active and mostly for early shipment.

Copper

Stocks of refined metal were cut nearly 3,000 tons last month, while

blister stocks increased slightly, with the result of a net cut in all stocks of about 1,700 tons to 307,434 tons, the lowest since the war. Refined stocks alone were 51,812 tons. Shipments of refined metal in the month were practically 140,000 tons, slightly less than in August, but higher on a daily basis. Of this total, 88,707 tons were for domestic users, the greatest amount shipped in one month.

Tin

The price has fallen a little farther in the past week, but firmed up on Monday. Buying on most days was extremely light.

Trade opinion in this country has been mostly on the bearish side, but opinions have not been strong enough to cause much actual market operation in that direction.

Lead

The market continues active and prices are firm, but unchanged. Use appears to be larger than earlier in the year and there is a general tone of confidence in the market.

Zinc

The market continues quiet, but the price on prime western is steady.

Business is done in a quiet, routine way and the market does not get up the enthusiasm shown in other metals.

This is natural with the recent increase in stocks to the highest in many months.

This month output probably will be lower and shipments are said by smelters to have increased.

Pig Iron

Pig iron prices are firm at Pittsburgh, although no appreciable change in demand is noted.

Basic iron is holding at \$17, valley, with most sellers in this district out of the market, owing to lack of supplies to sell. Most consumers are fairly well covered for the remainder of the year, but some are expected to be forced to seek additional supplies within the next month.

American Steel Foundries is inquiring for 3,000 to 5,000 tons of basic for Alliance, Ohio. An attempt is being made to establish \$17.50, valley, for No. 2 foundry iron. Several sellers have announced this as their current asking price, although an adequate test is not yet provided, and iron still is available at \$17.

One interest reports sales in small lots at \$17.50. Activity continues restricted to a few carloads at a time. Bessemer is firm at \$17.50, valley, although not particularly active.

While at Birmingham there is no great activity in the pig iron market, small consumers are buying one to three carloads at a time and the output is being absorbed.

Shipments are steady. Nineteen blast furnaces are in operation in Alabama, eleven on foundry iron.

Pig iron shipments to melters tributary to the Chicago district merchant furnaces are heavy, but furnaces feel easier as regards stocks.

With the blowing in of the two additional South Chicago merchant furnaces, a better balance of grades and analyses has been obtained.

Indications are that shipments this month will exceed the September volume by 10 to 15 per cent. Some melters are adding to their original contracts.

The price of \$18.50, base, Chicago furnace, is steady for spot and contract business.

Old Metals

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, \$16.00 to \$16.50; old iron axles, \$25.50 to \$26.00; No 1 wrought iron, \$12.25 to \$12.75; No. 1 cast, \$14.25 to \$14.75; all per net tons. Prices on non-ferrous metals are quoted as follows, per pound: Light copper, 10¼ cents; zinc, 3¼ cents; cast aluminum, 11¾ cents.

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Chicago Warehouse Metal and Furnace Supply Prices

METALS

PIG IRON

Chicago Fdy.	
No. 2	\$18 50
Southern Fdy. No. 2	22 26
Lake Superior Charcoal	27 04
Malleable	18 50

FIRST QUALITY BRIGHT TIN PLATES

IC 20x28 112 sheets	\$26 40
IX 20x28 40-lb. 112 sheets	30 90
IXX 20x28 56 sheets	16 85
IXXX 20x28 18 20	
IXXXX 20x28	20 20

TERNE PLATES

	Per Box
IC 20x28, 40-lb. 112 sheets	\$26 70
IX 20x28, 40-lb. 112 sheets	29 70
IC 20x28, 25-lb. 112 sheets	22 30
IX 20x28, 25-lb. 112 sheets	25 20
IC 20x28, 20-lb. 112 sheets	20 25
IV 20x28, 20-lb. 112 sheets	23 00

"ARMCO" INGOT IRON PLATES

No. 8 ga. up to and including	
4 in.—100 lbs.	\$4 55

COKE PLATES

Cokes, 80 lbs., base, 20x28	\$13 80
Cokes, 90 lbs., base, 20x28	13 80
Cokes, 100 lbs., base, 20x28	14 00
Cokes, 107 lbs., base, IC	14 30
Cokes, 135 lbs., base, IX	16 30
Cokes, 155 lbs., base, 56 sheets	9 00
Cokes, 175 lbs., base, 56 sheets	9 85
Cokes, 195 lbs., base, 56 sheets	10 70

BLUE ANNEALED SHEETS

Base 10 ga. per 100 lbs.	\$2 35
"Armco" 10 ga. per 100 lbs.	4 08

ONE PASS COLD ROLLED BLACK

No. 18-20 per 100 lbs.	\$3 60
No. 22 per 100 lbs.	3 75
No. 24 per 100 lbs.	3 80
No. 26 per 100 lbs.	3 90
No. 27 per 100 lbs.	3 95
No. 28 per 100 lbs.	4 05
No. 29 per 100 lbs.	4 20
No. 30 per 100 lbs.	4 30

"ARMCO" GALVANIZED

"Armco" 24 per 100 lbs.	\$6 15
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GALVANIZED

No. 16 per 100 lbs.	\$4 15
No. 18 per 100 lbs.	4 20
No. 20 per 100 lbs.	4 45
No. 22 per 100 lbs.	4 60
No. 24 per 100 lbs.	4 65
No. 26 per 100 lbs.	4 90
No. 27 per 100 lbs.	5 00
No. 28 per 100 lbs.	5 15
No. 30 per 100 lbs.	5 55

BAR SOLDER

Assorted	
50-50 per 100 lbs.	\$32 00
Commercial	
45-55 per 100 lbs.	28 50
Plumbers per 100 lbs.	25 50

ZINC

In Slabs	\$ 7.25
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SHEET ZINC

Cash Lots (600 lbs.)	\$11 25
Sheet Lots	12 25

BRASS

Sheets, Chicago Base	20 1/2 c
Mill base	19 1/2 c
Tubing, brazed base	28 1/2 c
Wire, base	21 1/2 c
Rods, base	18 1/2 c

COPPER

Sheets, Chicago base	24 c
Mill base	23 c
Tubing, seamless base	26 1/2 c
Wire, No. 8, B & S Ga. and heavier	19 1/2 c
Wire, No. 9, B & S Ga.	20 1/2 c
Wire, No. 10, B & S Ga.	20 1/2 c
Wire, No. 11, B & S Ga.	20 1/2 c

LEAD

American Pig	\$7 50
Bar	8 50

TIN

Pig Tin per 100 lbs.	\$58 00
Bar Tin per 100 lbs.	59 00

HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

ASBESTOS

Paper up to 1/16	6c per lb.
Roll board	6 1/2 c per lb.
Mill board 3/32 to 1/2	6c per lb.
Corrugated Paper (250 sq. ft. to roll)	\$6 00 per roll

BRUSHES

Furnace Pipe Cleaning	
Bristle, with handle, each	\$6 75
Flue Cleaning	
Steel only, each	1 25

BURRS

Copper Burrs only	40-10-5%
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CEMENT, FURNACE

American Seal, 5-lb. cans, net	\$ 45
American Seal, 10-lb. cans, net	45
American Seal, 25-lb. cans, net	2 35
Pecora	per 100 lbs. 7 50

CHIMNEY TOPS

Adams' Revolving	Wt. Doz.	Price Doz.
4 in.	21 lbs.	\$11 00
6 in.	24 lbs.	11 50
7 in.	30 lbs.	13 50
8 in.	32 lbs.	15 00
9 in.	51 lbs.	16 50
10 in.	54 lbs.	18 00
12 in.	66 lbs.	23 00
14 in.	110 lbs.	36 00

CLINKER TONGS

Each	\$1 50
------	--------

CLIPS

Damper	
No-Rivet Steel, with tail pieces, per gross	\$9 50
Rivet Steel, with tail pieces, per gross	7 50
Tail pieces, per gross	2 40

COPPERS—Soldering

Pointed Roofing	
3 lb. and heavier	per lb. 45c
2 1/2 lb.	per lb. 45c
2 lb.	per lb. 45c
1 1/2 lb.	per lb. 45c
1 lb.	per lb. 45c

CORNTICE BRAKES

Chicago Steel Bending	
No. 1 to 6B	Net

CUT-OFFS

Gal., plain, round or cor. rd.	
26 gauge	30%
28 gauge	35%

DAMPERS

"Yankee" Hot Air	
7 inch, each 20c, doz.	\$1 60
8 inch, each 25c, doz.	2 00
9 inch, each 30c, doz.	3 00
10 inch, each 35c, doz.	3 50
Smoke Pipe	
7 inch, doz.	\$1 60
8 inch, doz.	2 00
9 inch, doz.	2 50
10 inch, doz.	3 00
12 inch, doz.	4 00

ADAMS No. 1 CHECK

Check and Collar Complete	
3 inch, each	2 00
4 inch, each	2 25
End Check Only	
3 inch, each	1 60
4 inch, each	1 85
Collar Only	
3 inch, each	50
4 inch, each	65
No. 2 CHECK	
3 inch, each	1 00
4 inch, each	1 25
10% Disc. on Adams No. 1 and No. 2 Check	
Diamond Smoke Pipe	
7 inch, doz.	\$ 2 00
8 inch, doz.	2 25
9 inch, doz.	2 50
10 inch, doz.	3 00



"Who is *that* man?"

"He looks sort of familiar. Does he belong here?" asked the superintendent.

"He isn't on our payroll," replied the master mechanic, "but he sure gives us a lot of help with our welding. He's the Linde Service Supervisor. When we run into a tough job—like that new high pressure steam line, he's the man that shows us how to do it. Knows his business and ours where welding is concerned."

If your job involves more than ordinary welding technique, the Linde Service Supervisor is at your call. He is part of Linde Process Service which is free to Linde customers.

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Unit of Union Carbide **UCC** and Carbon Corporation

General Offices: Carbide and Carbon Building
30 East 42d Street, New York

54 PLANTS • 98 WAREHOUSES

LINDE OXYGEN

Mention AMERICAN ARTISAN in your reply—Thank you!

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Acetylene (Gas) Dissolved.
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Lamson & Sessions Co., Cleveland, Ohio
Ryerson & Son, Inc., Jos. T., Chicago, Ill.

Brakes—Bending.
Dreis & Krump Mfg. Co., Chicago, Ill.
Ryerson & Son, Inc., Jos. T., Chicago, Ill.

Brakes—Cornice.
Dreis & Krump Mfg. Co., Chicago, Ill.

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American Brass Co., Waterbury, Conn.
Copper & Brass Research Association, New York

Burners—Gas.
Wonder-Worker Gas Appliances Co., Cincinnati, Ohio

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Chimney Tops.
Standard Ventilator Co., Lewisburg, Pa.

Clinker Tongs.
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Stever Mfg. & Engine Co., Freeport, Ill.

Copper.
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Copper & Brass Research Association, New York

Cornices.
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Burton Co., The W. J., Detroit, Mich.
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Chicago Metal Mfg. Co., Chicago, Ill.

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Furnace Regulators.
National Regulator Co., Chicago, Ill.

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Brillion Furnace Co., Brillion, Wis.
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Henry Furnace & Fdy. Co., Cleveland, Ohio
Hess-Snyder Co., Massillon, Ohio
Homer Furnace Co., Coldwater, Mich.

Lennox Furnace Co., Marshalltown, Ia.; Syracuse, N. Y.
May-Fieberger Furnace Co., Newark, Ohio
Meyer Furnace Co., The, Peoria, Ill.
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Waterman-Waterbury Co., Minneapolis, Minn.

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L. J. Mueller Furnace Co., Milwaukee, Wis.
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Linde Air Products Co., New York, N. Y.

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Lamneck Co., W. E., Columbus, Ohio

Meyer & Bro. Co., F., Peoria, Ill.
Milwaukee Corrugating Co., Mil., Ch'go, La Crosse, Kan. City

Mueller Furnace Co., L. J., Milwaukee, Wis.
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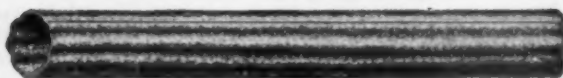
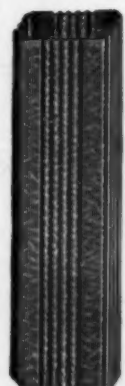
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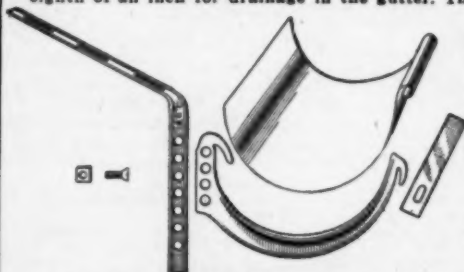
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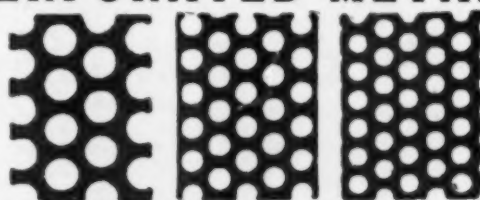


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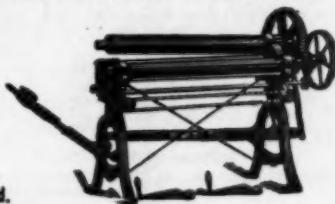
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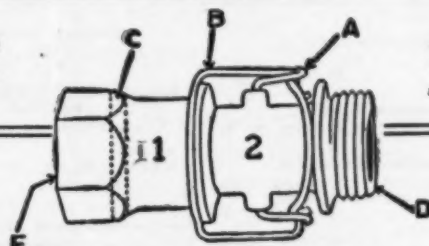
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Yearly subscribers to the **AMERICAN ARTISAN** may insert advertisements of not more than fifty words in our Want and Sales Columns **WITHOUT CHARGE**.

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For Sale—Old established sheet metal, auto radiator, warm air furnace and automatic oil burner business with all machinery. Located in the heart of a city in Wisconsin of about 30,000 population. Going out of business because of illness. Address **C484, AMERICAN ARTISAN**, 620 So. Michigan Ave., Chicago, Ill.

For Sale—Tin and plumbing stock, good town of 4,000 doing a good business. \$1,200 to \$1,500 will handle. Selling on account of wife's sickness. Address **B-483, AMERICAN ARTISAN**, 620 So. Michigan Ave., Chicago, Ill.

Wanted—A man to go into business with us who can invest \$2,000. Prefer one who has mechanical experience. Furnish reference, age and present employment. Address **Wisconsin Re-Tinning Co.**, Superior, Wis. **C-483**

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Wanted—A second hand spot welder, capacity 200 spots a minute. Address Chas. Barnum, Mankato, Minn. G484

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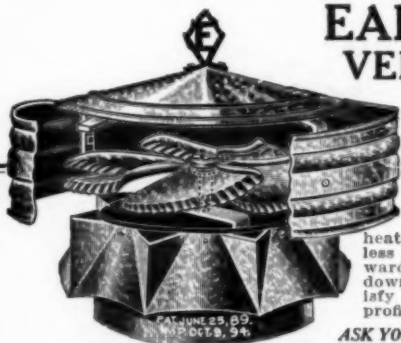
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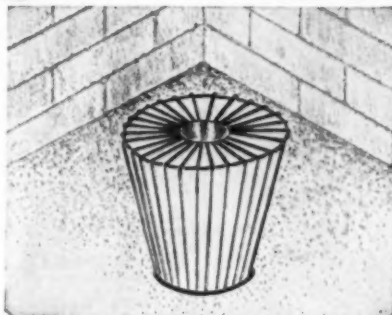
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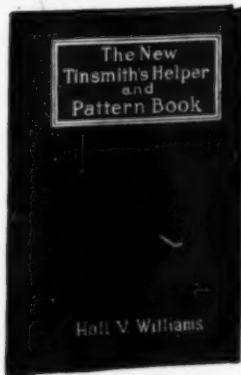
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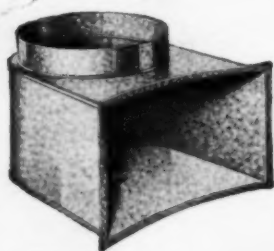
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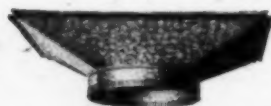
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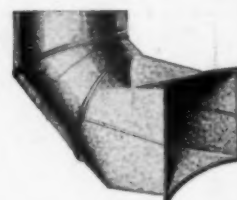
Managing Director



Cold Air Boot
Style B

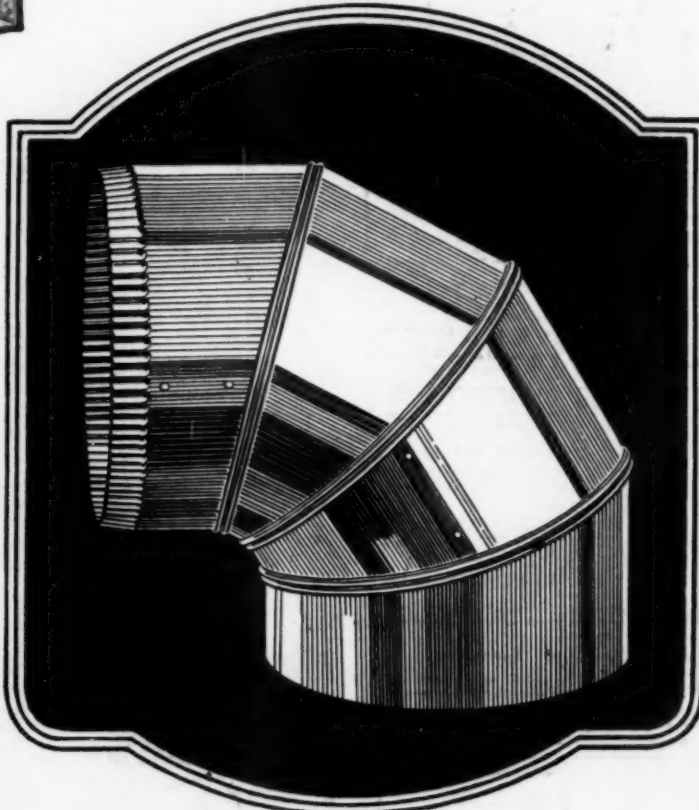


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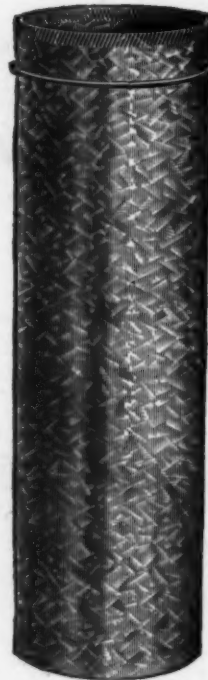


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